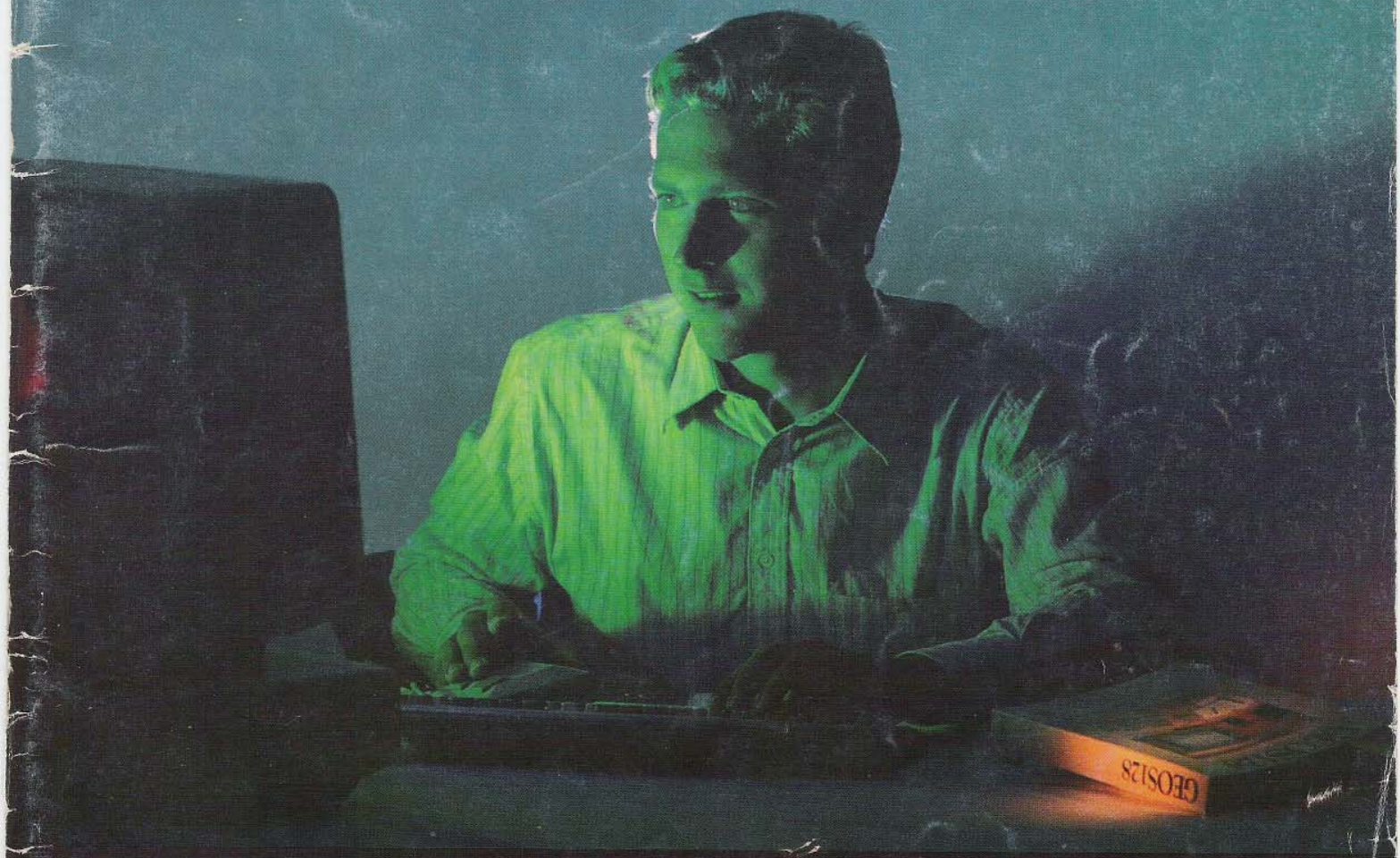
Vol 5 No 7

The Australian COMMODORE and AMIGA REVIEW

July $3*

HOXTON PARK $3.00 NEWSAGENCY 607 4179

GEOS inject new life into your 128



Datasette Doctor

Netcomm Pocket Modem

The Expert Cartridge

IO

Magnetron

Registered by Australia Post Publication No NBG 6656

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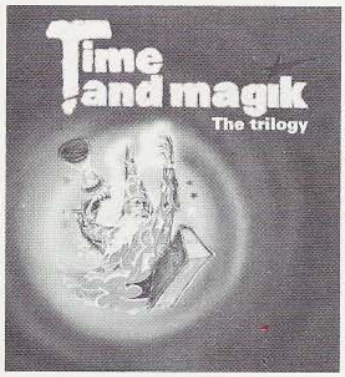
Pactronics the new Power in Entertainment software

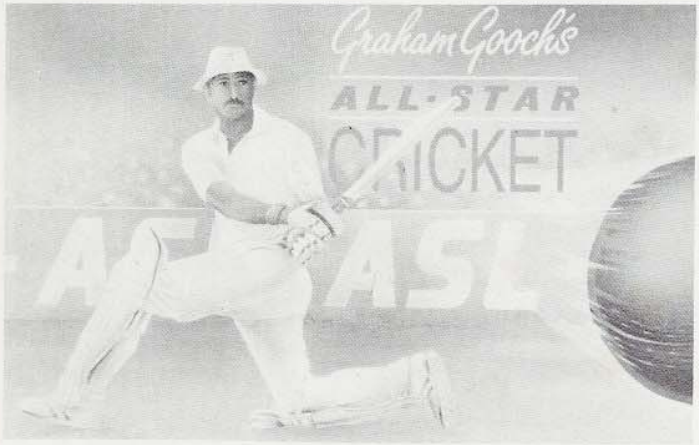


TIME AND MAGIK is a complete trilogy of "Level 9" graphic adventures.

LORDS OF TIME
RED MOON
THE PRICE OF MAGIK

Each has been enhanced and enlarged with more text than ever before - 60,000 words, creating Magik and Mystery around every corner. There is a powerful new parser, and all disk versions feature stunning full colour graphics.

You don't have to be into cricket to enjoy Graham Gooch's **ALL STAR TEST CRICKET**. Just plug in your Joysticks and go for it - arcade style. For the serious cricket fan - there's the simulation mode with the accent on strategy and tactics.



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Classic Quest - Goblin Towers

Somewhere in the centre of a huge forest lies an old castle. Legends and rumours about it abound, for it has been standing for many hundreds of years, and there are said to be great riches hidden in the depths of the castle. Though many adventurers have gone in search of this wealth, some have disappeared without trace, and the rest have failed to discover the exact whereabouts of the castle. Perhaps there is some truth in the legend of a hideous beast which guards the treasures of the castle.

Other titles include: **FORESTLAND, WITCH HUNT, CATACOMBS.**

Available from Maxwells Office Equipment, Microcomputer Spot, Grace Bros, Chandlers, and from leading computer retailers around Australia.

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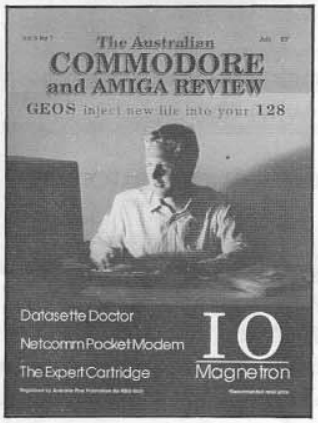
Pactronics

The Australian COMMODORE and Amiga Review

VOL. 5 NO. 7 JULY 1988



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Editorial

MUCH HAS been said in various overseas magazines lately on the subject of unbiased product reviews. As accusations fly between the competing publications, readers are deluged with a wash of explanations and policies. Why be different? Here's a few of ours.

Ideally reviews should be objective, expressing the facts, and detailing the requirements that a potential buyer would consider important. However, in reality such a review could never be written - and if they could be, the result would surely be dry and boring.

Instead, we find a good mix of personalities, preferably with some opinions to express, rather than just reporting a list of features that anyone can read off the back of the box, works best. We have canned our ratings system, as these tend to be unobjective. It is unusual to find that all our writers ever agree on the usefulness of any particular package or game, let alone arriving at a double digit number to represent aspects of it.

In general, you'll only find reviews of what we consider to be the better choices making their way to the store shelves. However, occasionally we take great pleasure in sliming some of the trashy items that also dare make their way down the corridors of our offices.

Hopefully this is the style you prefer to read. Entertaining, easy to follow for beginners, or old hands, informative and a little opinionated.

Most of our writers enjoy using many types of computers. The fact that Commodore happens to be their favourite is coincidental. The bias I refer to by the writers being opinionated is that of personal choice and preference - something that computer users are famed for. A fickle bunch they are, and that's always in the back of our minds.

So, the *Australian Commodore and Amiga Review* covers a variety of areas - not just games, or programming, or adventures. If there's something we're missing, why not drop us a line - on paper, so our editors can ponder over your suggestions. ■

Andrew Farrell

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Ram rumbles

New IBM PC/XT compatibles

AIMED AT THE HOME, and "work at home" user, Commodore has released the first in a new range, calling it the Colt. It features an 8088 processor, 4.77MHz and 7.16MHz switchable clock speeds, 640K of RAM, dual 5 1/4 inch floppies, and built in graphic adaptors. The machine is expected to retail for under $1000.

Of course, PC's can't offer the fun and excitement of an Amiga, or even a stock standard Commodore 64. However, as a straight up and down work horse, they're top value for money. ■

Australia behind?

WE ALWAYS HEAR users complaining that Australia is way behind overseas markets when it comes to new software and hardware. Well, you're wrong if you still think so. Lately we have found that titles we enjoyed here months ago, are only just now turning up in the US. In fact, the Commodore 128D has only just been released there, and is being heralded as a big improvement over the old design. Maybe we should ask if they want some seasoned Australian users to write a review!

Of course, there's another side to that coin. The Americans are enjoying the full compliment of 64K RAM video memory, and a bug free 1571/128D - many thanks to the hard nosed buyers out here that put up with the problems all this time, and no doubt helped Commodore find out what needed fixing. Perhaps it wasn't so great that we got it first . . . but then there's always the challenge of solving all those fun hassles. ■

GEOS takes the 64 to PC land

BERKELY SOFTWORKS has announced that GEOS owners will soon enjoy the potential to set up a LAN or Local Area Network using *geoNet*. The program - and hardware we presume? - links C64's and IBM PC's. No doubt files will be readily transferred between these two formats, but more importantly C64 owners might even enjoy hard disk access. ■

Disk Drives

The 1581 3.5" disk drive for C64 and C128 computers is now available in Australia.

These drives have the following features:

- over 800k bytes storage each disk
- uses double sided 3.5" disks
- support standard and fast Commodore serial bus protocols (including 'burst' commands) to maximize data transfer speeds.
- dual serial ports for daisy chaining more peripherals
- larger internal RAM
- increased relative file capability
- includes disk containing many useful utility programs.

These machines are manufactured by Commodore USA and are imported by Computer Discounts, 178 Pacific Highway, St. Leonards, 2065, Ph: 436 2600.

YPA acquires SLM

YPA Software Distribution Services has acquired Melbourne-based Software Licensing and Marketing Pty Ltd (SLM). Terms of the agreement were not disclosed.

The YPA-SLM transaction makes YPA probably the fastest growing player

Update

Well, I finally made it back, but only just. The trip over to Comdex in Atlanta was probably the worst I have ever made, a total of 24 hour delays at various airports.

But it was worth it, because I have seen a lot of new products, some for the 64, some for the Amiga and some for the PC's. I also went to shows in England and Taiwan and had meetings with French suppliers. The net result of all this is some great new educational programs for the 64, superb games for the whole range, new joysticks and disk boxes as well as business software, PC scanners etc.

I will, of course, bring you up to date with these new products as we release them on to the market here, but if you want to get more and quicker information (and you have not already done so), then **send your name and address, stating which machine you have, to our 'Up-Date' Club**. Also, keep buying this magazine as we invariably advertise new products and there are also regular write-ups on our products.

Final Cartridge III is now available in most of your retailers and by the time this goes to press we should also have **Amiga Tricks and Tips** and **Amiga Machine Language** in the shops.

With reference to the **COMPETITION** (prize $100 of software), what you have to do is to send in your idea of the meaning of the initials I always put at the end of each column; e.g. SYSIH - 'see you soon I hope'. The competition includes each month since we started the 'Up-Date' column, and also today's which will be

G.T.B.B.H.

Advertisement

in the Australian software distribution and marketing business. Established at the beginning of 1988, YPA offers prospective software houses a complete marketing and distribution support programme.

Brian Clayton, YPA managing director, said "We are committed to becoming the leading Australian software marketing organization. The SLM acquisition consolidates and enhances our distribution channels."

SLM has long been recognised as a major supplier of home computer software in Australia and will continue to service its exclusive Australia/New Zealand distribution contracts with leading UK software houses.

Alfred Milgrom, publisher, Beam Software, added "We are very pleased to have made this arrangement with YPA. Software distribution needs a professional, business approach which we know YPA is providing to this market. The transaction allows us to concentrate on software development."

YPA Software Distribution Services, located at Castle Hill, NSW, is the trading arm of YPA Holdings Pty Ltd. The company has exclusive distribution agreements with American-based Mindscape Inc., Thunder Mountain, Cinemaware and the Channelmark Corporation.

For information: (02) 899 2277. ■

MicroAccessories back

IN OUR MAY issue we mentioned that Micro Accessories of SA had ceased trading and was in the hands of the agents of the mortgagees in possession.

We are now informed that the trading name Micro Accessories of SA has been sold to another party who is continuing a similar business.

Micro Accessories now has a new team of staff ready to take orders for all your favourite products, including some of the best we've ever seen for the C64 - such as Dolphin Dos. You'll find them at the same address and phone number. ■

Commodore 64 annual

YES,WE'RE GOING to do it again. Another Commodore 64 Annual will be printed at the end of this year. Once again it will be packed with buyers guides, hints and tips, complete BBS and User Group listings, software guides and much more.

However, we need your help. If you currently run or are involved with a User Group, please ensure that we have a copy of your group's details ASAP! There is a form in this issue. So fill it in, and post it away today. Somebody in your area may be looking for a group to join. Why not give them a hand? ■

Birth control via your C64

NOW IT CAN BE TOLD - a computer can get you pregnant. When a woman friend asked Robert Bowden if she could use a computer to track her menstrual cycle, he created *Period* - the first software program that can honestly be called a birth control device.

This is NOT a joke. Bowden is the master at creating offbeat health products for computer owners.

Period (for Commodore 64/128) provides a monthly calendar that can be used as a guide to determine when a woman is most likely to conceive. Technically, it uses the Ogive rhythm method, long used by Catholics practicing natural birth control.

The woman takes her temperature each morning and types the numbers into the computer, which calculates bar charts that pinpoint ovulation. The "danger days," when a woman is most likely to conceive, are indicated in red. If she doesn't want to get pregnant, she should practice abstention on those days. If she is TRYING to get pregnant, she knows when to try.

Bowden claims the program will have a 99.6 percent success rate, if strictly followed. He also believes it is possible to determine the sex of your child by timing conception precisely, and provides instructions to help you give birth to the child of your choice.

If that's not wacky enough, Bowden (who, we're convinced, is a true genius) has another program called *Planning Tanning*. Yes, this one takes the guesswork out of getting that perfect suntan.

You simply tell the computer the month, time of day, your skin type, sky condition, and the type of tanning lotion you're using. The computer does the calculations.

"When the math executes instantly," Bowden says, "you have an exact tan time for each side of your body."

The only problem is finding a place on the beach to plug in your computer.

There's one more yet! For the 10 percent of the population who consider themselves too skinny, Bowden created *For Ectomorphs Only* -- a computer program that puts meat on your bones.

The program helps you gain weight, and increase your strength and muscle mass. Exercises are performed three minutes a day in front of the computer, and the user is instructed on foods to eat.

Bowden claims that following the program will help you gain one pound and increase your strength 5 percent weekly.

Not only that, but *For Ectomorphs Only* will even help skinny people pick out the most flattering clothes by demonstrating how colour, style, and pattern affect appearance.

Maybe Bowden could use some help in naming his software, but this is weirdware at its finest. In a field where all we ever hear about are boring word processors and databases, Robert Bowdens software is a breath of fresh air.

He sells *Period* for $25, *Planning Tanning* for $10, and *For Ectomorphs Only* for $12. All dollars are US. Contact him at: 4907 22nd Ave. W., Brandenton FL 34209. ■

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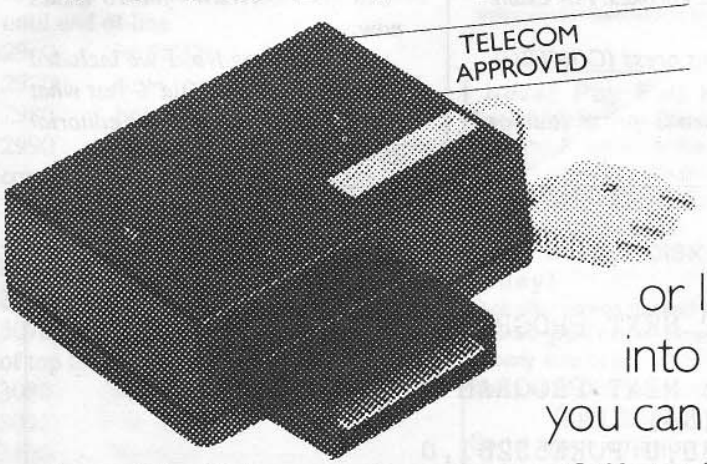

Commodore is offering Viatel adaptors for only $79.80, a saving of $160. So if you own a Commodore 64C, 128 or 128D, transform your computer into a 2-way system, through which you can receive and act on information.

Send in this coupon now. Offer closes August 31, or until stocks last.

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LETTERS
TO THE EDITOR

Disk mag demos

I would like to know why you put demos on your C64 disks that don't belong to you, then charge fees for the disks and don't give royalties to the demo makers?! (e.g. Sights'n Sound demo by Company S of Oz.)

Jeff Phillis
Rockhampton, Qld

***Ed** - We like to think that the demos on side 2 of our disk mags are free! Besides they mostly contain music and graphics "ripped off" from commercial programs.*

Loading

I have been reading *The Australian Commodore and Amiga Review* now for the last two years and have found it to be a very good and helpful magazine catering for all levels and particular interests of Commodore computer users. With all this expertise I was wondering if you could help me with a problem?

In basic, I am writing a program that calls for another basic program to be loaded from disk at the end of the first program. However when loaded the second program is always corrupted and/or incomplete.

I feel that I need to include something in the first program to clear the memory before loading the second program? Can you help? I need this for Basic 2,0.

A.P. Horth
Oakhurst, NSW

***Ed**- The following program will solve your problems. Just put the file name of the next program to be loaded in QS. Note that what is contained in the square brackets refers to single keystrokes. For example:*
"[WHT]" means press (CONTROL & 2}
"[DOWN]" means press (cursor down)

```
10 REM YOUR  FIRST PROGRAM SITS HERE..
20 REM ..
30 :
40 :
1000 REM BOOT NEXT PROGRAM
1001 :
1005 NA$="THE NEXT PROGRAM"
1010 Q$=CHR$(34)
1015 POKE53280,0:POKE53281,0
1020 PRINT"[CLR][WHT]PLEASE WAIT....LOADING"
1030 PRINT"[DOWN][DOWN][BLK]LOAD"Q$NA$Q$",8"
1040 PRINT"[DOWN][DOWN][DOWN][DOWN]RUN"
1050 PRINT"[UP][UP][UP][UP][UP][UP][UP][UP][UP]"
1060 POKE198,2:POKE631,13:POKE632,13

READY.
```

Old or unnew

I have just installed a reset switch, which you mentioned in the December 1986.

The only problem is that I haven't been able to find an unnew or old program. Could you please help me. I have also bought the game *Elite* by Firebird and I would greatly appreciate any hints you could give me. I have been able to get into witch space by doing the following: Freeze "x" unfreeze and hyperspacing while holding down control. I hope it helps someone.

Peter Boyers
Irymple, Victoria

***Ed** - Our disk mag (recently renamed as Suite 64) has been providing users with program such as "Old" or "UNNEW" for 10 issues now.*

On disk mag No. 1 we included a program called "Old" - just what you are after. Contact our editorial offices for more information.

WA Amiga groups

Hi! I've been a subscriber to your magazine for about a year now and I would just like to say that it is the one magazine I look most forward to receiving.

Anyway, I was wondering whether you could get me in touch with any Amiga user group around my areas, as I am desperate for information and knowledge.

Tony Rodriquez
Mirrabooka, WA.

***Ed** - We have three user groups on file that are located in WA:-*
Vic-ups Computer User Group

Contact: Russ Cappins
Phone: (09) 332 5313
Vic-ups Nedlands (ins)
Contact: Norman Holtzman
Phone: (09) 367 1462
Bull Creek Vic Ups Commdore User Group
862 Forrest Road, Jandakot
Contact: L. Baelan

User 72+

Have just received the April ACR and with only a few moments to spare, read through, "Letters to the Editor". You wish to know if anyone can beat 66. Well how about 72+.

My first unit bought was a disc drive family pack in December 1983, which was mainly to get my grandchildren involved in computers, something I recognised asa thing that they should NOT be scared of, they now range in age from 5+ to 18+.

My setup now is a C128, 1901, 1571 and mps801. Because I am a Church secretary they purchased a Riteman Super C plus, which is used for their work.

About 50% of my work is word processing, which has progressed from:-

1. *Type and Write*
2. *Heswriter*
3. *Easyscript*
4. *Timeworks, Word Writer*

I am very satisfied with the last one and, with all the files (inc. histories etc.), would not wish to change. I did have trouble with the Riteman until several ACR readers reported similar problems. Early, the dealer had not heard of the problem so I kept persevering. After the articles in your columns they got a replacement chip and fitted it no charge.

Most of the other work is using *Superbase 64* (have S/B 128 but will not change all the files as yet) to keep the rolls of a parish consisting of two churches. It is the usual set-up, of 14 fields but does include:-

A. One is Involvements, up to a max of 10 different entries.

B. Two are classification entries of a choice of one of 3 to enter.

C. One is a designation entry of either, this or that.

D. One is a numerical entry of greater than or less then.

The print outs are usually as follows:-

1. A total Parish Roll of both churches by:-

A. Surname.

B. Street name.

2. A total "listing" for each of the two churches.

3. There are numerous listing that have been called for and printed out including double sorts (my terminology).

It appeared I would never master S/B until I read in ACR about "Superbase the Book". Once Version Two was obtained, no more problems.

My other interest is Genealogy, which was started long before 128 days. There are about 8 or 10 disks (not inc B/U's) The Program is Ezitree, by Rex Twoomey of Berowa. I now have S/B 128 and also his conversion program, but cannot find the time to finish my projects.

So far I have never had to go past the books and instructions given, although one has to do a little converting of the language on occasions, one thing is a great help and that is common sense, patience, logic and the ACR.

Will be waiting to see if there is any advance on 72+.

Perc Linsell
Pascoe Vale South, VIC

Ed - Can we beat 72+?

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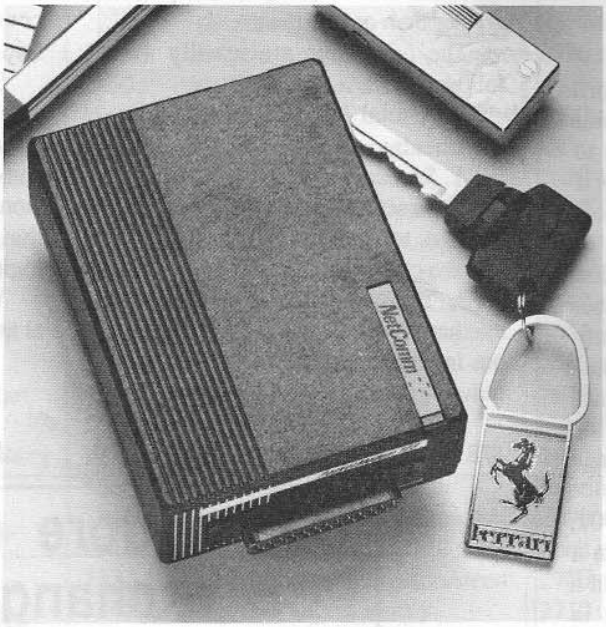
Netcomm's Pocket Modem 123

Last year, Netcomm released a modem for the C64 that turned the communications market on end. It handled both Viatel and ASCII connections, thanks to a brilliant program called GP-Term. Andrew Farrell examines their latest offering.



TELECOMPUTING continues to grow. And now, you can enjoy 300, 1200/75, and 1200 baud communications for just $349 RRP. The unit in question is Netcomm's Pocket Modem 123, boasting a two year warranty, and handy pocket size for computing on the move.

Inside you'll find the modem, which is about the size of an audio cassette except twice as thick, and an excellent manual. Several brochures, and a listing of bulletin boards is also found, however the listing was last updated in October, 1986 - rather out-of-date.

The unit connects directly to the user port, and sits immediately behind the C64. The socket has guide pins, so you can't accidentally plug the 123 in the wrong way around. There are no indicator LEDS, except a power lamp - which can be selected to act as a carrier detect lamp. Once you switch on, the modem is on, there is no power switch. Connection to the phone line is achieved by a US type click connector, and about one meter of cable.

Operation

Features of the pocket modem are a marked improvement over earlier models. The standard Hayes AT instruction set is built-in, and a summary of the relevant commands included on a separate card. Operating modes include:-

CCITT V21 at 300bps
CCITT V22 at 1200bps
CCITT V23 at 1200/75bps
Bell 103 at 300bps
Bell 212A at 1200bps

For the uninitiated, Bell is the US standard for communications, whilst CCITT is that which relates to Australia. Auto dial, and auto answer are also catered for. Dialling may be either pulse - the standard still used in most areas of Australia - or tone - currently being introduced in some areas.

GP-Term is available separately, and will work well with this modem. However, virtually any terminal program is acceptable. A Hayes modem allows most functions to be performed using very simple commands - these could even be issued from a BASIC three line terminal program.

As an example, to dial a BBS service, you would enter:-

ATDP9811074

The AT requests the modem's attention, the D stands for Dial, and the P for Pulse Dialling, the remainder of the command is the phone number.

Other functions include a self-diagnostic test, modem speaker control, modem message control, redefinable control characters, and timing controls.

How useful?

Would anyone really make use of a pocket modem? On the surface it sounds like a gimmick. However, there is practical value in such a small device. Firstly, if you have a cramped desk, this is a real space saver. It looks neat, and is quick and simple.

If you have several computers, the Pocket Modem is one of the easiest to move between computers. There are less cables, and less overall bulk. For fewer group leaders, setting up on the move, and continually shifting gear, the Pocket Modem is ideal.

Construction wise, it's a robust device, that looks like it could even cope with being trodden on, or dropped. I don't recommend you put it to the test, but the feeling is there.

Conclusion

In the usual Netcomm style, the Pocket Modem is well presented and documented. It has all the features a budding hobbyist would ever need - and the auto-answer function could even provide the basis for a Bulletin Board System. Unfortunately, there is no auto-detect, so the calling modem would need to operate at whatever speed you set up at.

Overall, good value for money. All enquiries should be directed to Netcomm on (02) 888 5533. ■

Australian Commodore Review SUITE 64

Disk magazine No. 11

Features

- **Circle Navigation** - calculate the distance between any 2 points on the earth
- **"Panes"** - windows utility for your own programs
- **ADOS point and click menu system**
- **Arcade game**
- **Geos utility**
- **HSC survival programs**
- **Music to put in your games**
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DISK MAGAZINE NO. 11— Double sided disk

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(NOTE: these disk are not for Amigas)

The Expert Cartridge

This cartridge differs from others previously reviewed in that it's user-programmable and easily updated to cope with the latest developments.

A review by Eric Holroyd

I'm reviewing Version 3.2 of the Expert which is basically a "blank" cartridge on which you "install" the feature you want to use, ie load it in from either disk or tape. V3.2 software has 26 different files and programs totaling almost 150k of programs.

The very versatile Expert first of all allows you to make backups (for your own use only of course) from tape to disk, disk to tape, tape to tape or disk to disk. The backup is a fast-loading single file, compacted to save disk space and the backups don't need to have the cartridge plugged in to load and run them. They're completely "stand-alone" files. I found that I could usually get three games per side as well as the Trilogic "No-blocks boot" which is an easily-installed menu program.

On booting up the V3.2 disk with the cartridge in place, you're treated to a menu displaying all the available options. These are:-

A The menu itself
B Easifreeze — Freeze program and save backup to disk
C Easifreeze — Freeze program and save backup to tape
D Freeze program — Disk backup includes infinite lives, joystick swap,sprite killer, monitor printout, and most machine code monitor commands
E Like D — Tape backup
F Freeze program — Disk backup includes sprite viewer and saver
G Like F — Tape backup
H Freeze program — Disk backup includes hires screen saver. No tape facility for this option
I Freeze program — Disk backup includes full ML monitor
J Like I — Tape backup
K Install — No Blocks Boot, and Fast Disk Formatter
L Sprite Editor — Loads and saves edited sprites on disk
M Sprite Editor — Loads and saves edited sprites on tape
N Expert Express — Disk Turbo and Dump to screen or printer
O Boot 1570/1571 — For drive-users to reload Experted files
P Save to Tape — Experted files/programs, also for basic programs
Q thru **Y** — Convert graphics between various formats
Z — Introduction to the Expert System

Most menu options are self-explanatory, and the 18-page manual takes you through all the various steps involved in using the various features.

There are some nice thoughtful touches such as the Joystick Swap in option D. This is a routine that changes the joystick read to check the other port when the game is restarted. Handy if one of your ports is otherwise tied up or malfunctioning. You can also add joystick autofire in D too. These two routines work on most games (but not all) apparently.

The monitor printout is good too for those folks smart enough to read and understand what's happening in a program. Unfortunately I'm not one of them, so I can't tell you much about the ML monitor features other than what the hot-shots say at various user groups with which I've been associated, and that is that the Expert has the most comfortable monitor to use and its features are second to none.

EasiFreeze in options B and C is very easy to use. First plug in the cartridge, put the 3-position switch to PRG, then turn on the 64. Load the disk with "*",8,1 and you get the menu as above.

Disk-users choose "B" and you then get an option to TurboLoad it or not. If you already have a speedup device (such as the Cockroach TurboRom) choose "No". The program loads quite quickly and you get a screen of instructions. Follow these and you really can't go wrong. You're asked to "press SPACE to program the Expert" and when you do it's done in two seconds. In the meantime you get a really flashy screen with revolving sprites spelling out the TRILOGIC name, it's just like one of those nice Compunet demos.

After this, the screen says "put the switch to the ON position and press RESET". (Yes there's a built-in reset switch too for putting POKES in etc.) At this stage you get another info screen and pressing SPACE gets you from there to a screen telling what the four function keys are programmed to do. This is:-

F1 Save
F3 Restart
F5 Configure
F7 Reset

It'll all be much clearer and quicker to understand when you get to use your Expert, as this is one of those things about computers that take much, much more time to explain than to actually do.

I'll explain the remaining steps of Freezing a program now that we've got to that screen, and it's very easy really.

Press F7 to reset the 64 (it clears computer RAM at the same time), put the Expert's switch to OFF and load the program you wish to save. When it's finished loading, put the switch to ON and

tap RESTORE to freeze it. That's it! This works on most programs but on the odd one or two there's something in the protection system that tries to lock up the system. In this case a little LED lights up red and you need to press the ESM button on the cartridge to freeze the program. If this doesn't arise you just press F1 to save it.

I'm actually doing all this on the office C-64 whilst I write this on the C-128 and the program I chose to freeze as I'm working required the use of the ESM button.

After pressing F1 to save the backup there's a lot of screen-flashing whilst the Expert compacts the backup before saving it to disk. It just took about two and a half minutes to compact and save a game program which finished up at 231 blocks. This loads back in with the No-blocks boot I mentioned above (it's a nice little menu system) and as the C-64 has a Cockroach TurboRom it loaded in 29 seconds including de-compacting. Great stuff!

Back now to the point of freezing: Once the program's frozen you're returned to the function-key screen as above and can choose to Restart the game where you broke into it to freeze it, or Reset the C-64 and try out your backup instead. The F5 option is just in case the program uses memory that the Expert uses itself and if your backup doesn't work properly (unlikely) then Configure the memory using F5 and go for it again.

Space doesn't permit me to go into all the other features at such great length. Suffice it to say that everything I tried worked out beautifully and this cartridge is a pleasure to work with. Once you've loaded in the feature you want the Expert to have, you can switch it on and off at will and the program stays there as long as it's plugged in to the C-64. It doesn't have battery backup to be able to retain the program in its own memory but that's a small price to pay for so much versatility.

To sum up: The Expert makes unprotected backups and saves them to tape or disk.

It allows sprites to be extracted from one program, changed around and loaded back into the program (or even into other programs!). Imagine Rockford changing places with Thing-on-a-spring. It's all possible with this system.

It can give you a game with infinite lives so that you can't be killed off and so can explore all those levels that you haven't yet been able to reach.

It lets you capture a Hires screen and save it to disk, even allows you to change it from one format to another (there's quite a good selection here too).

The Code Interrogator/Monitor is completely invisible until you need it and then it gives you access to the whole 64k of RAM. It can be used in both Basic and Kernal ROM areas as well as the $0000 I/O block registers and the RAM under ROM in this block. It lets you inspect a program, alter it, write new bits in machine code, convert decimal to hex and vice versa, search for data/text/addresses, compare blocks of memory and a fair bit more. There's plenty of help in the manual on this feature and if you're a machine code freak this is probably the best thing you're going to see in a long time.

Expert utility disk

There's something I haven't touched on yet and that's the Expert Utility Disk. Version 3.2 of this has an improved compactor for Experted files, over 50 cheats for popular games, more than 25 pokes for difficult-to-backup games and has multipart parameters for over 25 multipart games. There's a file copier too, for use in transferring files. The compactor is quoted as being able to quickly compress your Experted files down to well under 202 blocks and mentions an instance where an Expert user compacted *Airwolf* down from 230 blocks to 123!

This disk is included in the package to original purchasers. Upgrades will be available at $14.50.

I was pleased with the whole concept of the Expert system. It's not just a backup generator but provides a whole range of useful utilities and programs for manipulating both code and pictures (which can also be printed out nicely by the way) and it's bound to find plenty of new friends now that Trilogic's products are available in Australia.

Being completely menu-driven makes it easy to work with and the manual explains those bits you don't quite understand. The fact that it's user-programmable also makes it user- upgradable and Trilogic brings out an update disk/tape roughly twice a year for a modest price. I liked it a lot and recommend it very highly. Distributed in Australia by Computermate Products (02) 457-8118. RRP $129.00. ■

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GEOS 128

by Frank Paterson

This article could truthfully be called "A Review of Another Operating System for the C-128", for that is what GEOS is. To the 128, GEOS is its fourth operating system, after the ROM-based 64 and 128 modes and the disk-based CPM supplied with the machine.

GEOS 128 has reinforced my opinion that the 128 is the unsung great in eight-bit home computers. Graphics, sound, a nice BASIC in 128 mode, a programmable 80-column chip, built-in machine-language monitor, ability to expand to 640K of RAM, on-board Z-80 chip giving access to an enhanced CPM - the list goes on and on. Play games, run stock-control programs, write magazine articles, write your own professional-looking applications in an advanced BASIC which supports hi-res graphics and colour. Add sound if you want it. Or switch to CPM and use PASCAL or C or FORTRAN or COBOL. The choices are endless, and they're yours for the making.

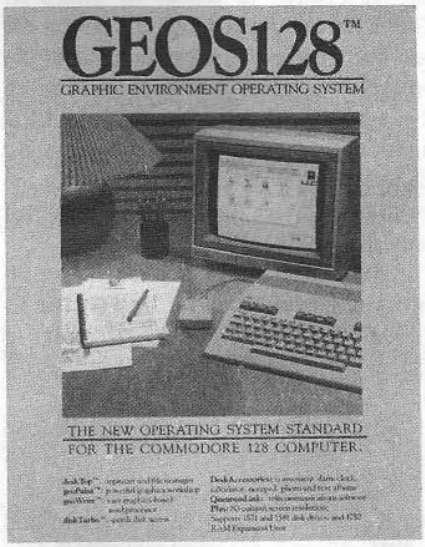
GEOS 128 is another, different, working environment, an environment based on icons and pointing instead of words, menus and commands. It is, by nature, very similar to GEOS for the 64, but has been enhanced to take advantage of facilities and features of the 128 which the 64 doesn't enjoy. In the main, these are more memory, faster disk access and a super hi-res screen - 640 by 200 instead of the usual 320 by 200.

On opening the long-awaited package, my first impression of the product and its presentation was a good one.

For your money, you get two disks, a manual and some blurb about Quantum-Link, an on-line service set up exclusively for C-64 and 128 owners in USA. Unfortunately, it's not much use to Australian computer-owners unless you're willing to pay ISD telephone rates to North America on top of Q-Link access charges. Just for the heck of it, I dialed up a couple of Canadian and USA Q-Link access numbers and got the modem carrier tones, so I guess if cost wasn't a worry, you could become a member and access the system at about $1.80 a minute for ISD, plus whatever the Q-Link charges are.

I wish we had something as good as Q-Link here in Oz for Commodore users. Q-Link officially supports the GEOS/64/128 combination, and has direct contact with both Commodore and GEOS designers - just ask a question on line and have it answered within 48 hours by a Commodore engineer or Berkeley programmer. There is also a lot of software support, with public domain programs coming from Commodore and other sources, and upgrades to GEOS input and output drivers, character fonts, etc being made available by the publishers for downloading on Q-Link, free of charge. It's enough to make you green with envy.

The two disks are double-sided floppies. One is a system disk, with a Q-Link demo (modem not required) and Q-Link terminal software on the back. The other is a backup system disk, with applications and font files on the back. The only applications supplied with GEOS are *geoPaint* and *geoWrite*. There are others, such as *geoCalc*, *geoFile*, *geoDex*, *geoPublish*, etc which are available as separate packages at additional cost. I hope to review them in these pages.



The manual is spiral bound, and has been punched with three holes so that it can be stored in a ring-binder. Now, if you read my recent review of *Becker-BASIC* in this magazine, you will realise that I have a particular hatred of reference manuals that won't stay open and flat on the desk. They are practically useless unless you pull them apart and put them in a ring binder. Berkeley Softworks has been listening to we reviewers, and has come up with an excellent manual which is complete, logically set out, has a pleasantly readable, non-technical style and lays flat on the desk. Well done, team!!

Installation

Unlike the 64 version of GEOS, you can't just boot up GEOS 128 and run it. You have to install it first. This involves a number of disk swaps between the system disk and the backup system disk. Why? I don't really know. The manual tells you clearly and step-by-step what to do, but it doesn't explain why the process is necessary or what is going on. Once installation is complete, you can then boot the program and you're on your way.

I received my review package indirectly - via the Editor's office, actually. Now it is well known that neither the

Editor nor the Assistant Editor can resist playing around with a good piece if software, so it is hardly surprising that my copy of GEOS 128 arrived already installed.

After installation, you should make an applications disk, or a series of them, depending on your requirements; for example, one for *geoPaint* and one for *geoWrite*, etc.

Don't be so impatient to get started that you miss this step and begin playing around on the master disks. Obviously, you cannot explore an application without opening a document to give it something to work with. No problem. The trap comes when it's time to quit, because GEOS applications do not have a Quit-Without-Save option. This means that regardless of the way you choose to leave an application, the document you opened at the start will be written to the active disk. If your active disk happens to be a Master, chances are it will be corrupted. The manual gives you fair warning in its list of "Never and Always (Do's and Don'ts)" on page 2-11.

I found that a 1571 double-sided work disk could accommodate both *geoPaint* and *geoWrite* as well as the Desktop and its accessories and still have plenty of room left to store output files. However, if you only have a single-sided drive such as the 1570 or 1541, you will probably find that to ensure a reasonable amount of data storage space, you have to confine yourself to only one application per disk, plus Desktop and accessories. Out of that data storage space, GEOS applications take about 5k to write temporary files as they go. If that minimum amount of space is not free on the active disk, GEOS won't even let you open an application.

If you have TWO single sided drives, you could leave the Desktop and accessories on a disk in the non-active drive, so that all you need on the active drive is your application, eg *geoWrite*. This arrangement gives you much more data storage space on the active drive. If while using your application, you call for a Desktop accessory which is not present on the active drive, GEOS will automatically search on the non-active drive and load it from there if it's present. Any files generated by the accessory are written to the active drive, so that all your work from a session with an application stays on the expected disk and it remains easy to import snippets of data from one application into another, using GEOS' Photo Manager or Text Manager.

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Likewise, if at the end of a session on an application, GEOS can't find Desktop on the active drive, it will search on the non-active drive and load it from there. But the directory that is displayed comes from the active drive - the one you've been working with all along.

If GEOS can't find Desktop on either drive when it is required, it simply asks for it. The program does exactly what you would expect without your thinking about it or instructing it - things that are so obvious that if the program designer asked for your opinion at the design stage, you wouldn't think to specify them; yet they are done. The designers have made GEOS very intuitive and as a result, very easy to use.

All of the above applies to the 64 version as well as that for the 128, so even though GEOS 128 is new, the principles aren't. But they're worth pointing out for the sake of those readers who haven't experienced GEOS yet.

Screens

A very nice feature of the GEOS 128 system is its ability to turn the 80 column text screen into a super hi-res graphics screen. The result, though limited to only two colours at any time, is spectacular in its crispness and clarity, and is a real pleasure to work with. Unlike the 64's GEOS screen, this new screen represents a full page width in *geoPaint* and *geoWrite* (and, I presume, in other applications), meaning that you don't have to scroll around the document so much. The time thus saved is considerable and the working environment much improved.

The standard VIC screen as seen on the 64 is also available, and you can switch at any time from one to the other.

You might wonder why you would bother with the VIC screen, given the apparent superiority of the 80-column graphic screen. One session with *geoPaint* will give the answer, which lies in the shape of the pixels used in the 80 column screen. Because there are twice as many of them in a screen row as there are VIC pixels, the 80 column variety must be half as wide. This has the result of squeezing the screen image at the sides, so that circles appear as vertical ellipses, and a square would appear as a rectangle standing on end, etc.

By the same token, if you draw freehand a nicely proportioned image on the screen, at print time it will appear as if an elephant sat on it. This could be frustrating for the budding electronic Michelangelo - indeed, I have observed this very phenomenon and its adverse effect on creativity in my twelve year old offspring.

The VIC screen is properly proportioned, so as you create a masterpiece on the full-width 80 column screen, you can switch to the VIC screen from time to time to check the appearance. If you're not happy, you have full *geoPaint* editing facilities at your disposal while on the VIC screen, so you can correct the proportions.

There is also the File Preview option available from either screen, which is designed to give you a rough idea of how your work will look on the printed page. It will show proportions and positioning on the page, but lacks detail which is fair enough, considering its limited purpose.

Probably the most important reason the GEOS designers had to include VIC screen capability into GEOS 128 is not so much to help the artists amongst us get their proportions right, but to recognise that not all of us are lucky enough to own an 80 column monitor. Some, in fact, may be using a TV, in which case the 40 column VIC screen is the only option.

GeoWrite doesn't suffer to the same extent from the proportions problem on the 80 column screen, though some of the more decorated fonts, like Dwinelle, can be difficult to read on the screen. The manual suggests that you can wind down the vertical size of the picture on your monitor to ease the problem, but then you would probably mess up the proportions on the VIC screen. I think there are better options, like viewing the text on the VIC screen, or using a plain font while editing and adding the fancy stuff later.

I was pleased to discover that fonts distributed for the 64 version of GEOS work perfectly with the 128. In fact, any files which are independent of 64 hardware will work on the 128, so that files created by *geoPaint* or *geoWrite* on a 64 may be loaded into the 128 version of the application and successfully edited. Even the 64 versions of the programs themselves will run on the 128 as long as the display is confined to the VIC screen, because the hardware used in the computer is the same in both 64 and 128 modes. That says a lot for the systematic approach the designers must have taken in creating the GEOS system.

Another enhancement in the 128 system is the CONFIGURE file, which allows the user to tell GEOS what kind of disk drives he wants to use. You can mix and match drives: for example, you can choose a 1541 as Drive A and a 1571 as Drive B, etc. The new 1581 three-and-a-half inch drive is also supported, though there is one caution. The manual states that whole disk copies cannot be made from a 1541 or 1571 to a 1581 and vice versa, which is a bit of a disappointment if you own a 1581. I don't know whether or not 1581s are available in this country yet, but I certainly don't have one, so I can't verify the problem. If it does exist, I suppose the only way to copy a whole disk from five-and-a-quarter to three-and-a-half inch format or vice versa is file by file, which could be tedious.

That aside, the best is yet to come.

Taking advantage of RAM

With any disk-intensive program such as GEOS, speed lost through disk access can be a real pain in the neck, and it's particularly evident in serial systems such as the C-64/128 - 1541/1571/1581 combinations. GEOS has been designed with limited memory in mind, so that instead of storing all its working data in RAM, it writes temporary files onto the active disk and tacks them all together at

update, close or quit time to make a data file. The technique is called "virtual memory". It allows work on files far larger than could ever fit in a computer's RAM, but of course, it is at the cost of speed because accessing data on a disk is much slower (hundreds of times slower) than accessing the same data in RAM.

Great. Let's plug in 512k of RAM expansion, load up our applications AND data and forget about disk access altogether until quit time.

Sorry, folks, it's not that easy. All GEOS programs have been written to handle data in finite chunks manageable by the smallest system, the 64. If they were to be modified for expanded systems so they could handle more data in RAM, there would be a loss of the compatibility and transportability. The neat systematic approach would also be lost, and there would be a profusion of versions to be upgraded each time an improvement was made to the main program.

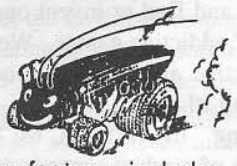
An easy and neat way to side-step all that and still take advantage of extra RAM when it's available is to convince the computer that the extra RAM is not just ordinary memory, but a disk drive - a RAM disk. RAM disks operate much faster than ordinary disks because they are entirely electronic, with no parts to spin up to speed, no heads to move about, etc.

All that is required is the extra RAM (provided by a RAM Expansion Unit, or REU) and a relatively small program to set it up. You supply the REU; Berkeley have supplied the set-up program in CONFIGURE.

Once you've configured the RAM disk, you then copy whatever is needed from a conventional drive across to the RAM drive, make it the active disk, and away you go. For all intents and purposes of the computer, the RAM disk looks and behaves just like a conventional floppy, with the exception that read and write times are much, much faster. You can still use the same, unmodified, disk-intensive programs, but you get the advantage of RAM's speed. Neat stuff.

At the end of the session, you must remember to copy your updated work from the RAM disk back to a floppy, or it will all be lost when you power down. Copying to and from the RAM disk is much faster than doing the same between two floppies, especially when copying TO the RAM disk, as writes are almost instantaneous. In setting up your RAM disk, you can choose between a 1541, a 1571 or a shadowed 1541.

The last is interesting, because it removes the need to copy everything to a floppy on completion of a session. Basically, what happens is that the shadow



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RAM drive is used to remember data that has previously been read from a disk on a real 1541. If data is requested by a GEOS application after it has been read once before, it will be served from the shadow RAM drive instead of the real drive, thus saving extensively on read-time. Disk writes go straight to the real drive, so the floppy is always correctly updated - you won't lose data at power-down. It gives you the best of both worlds - a significant speed increase in overall disk operations and a minimum of fuss and bother.

There are even more goodies associated with using a RAM expansion unit. The REU is capable of moving data much faster than code can move data within the computer. If, while within CONFIGURE, you select "DMA for Move Data" (DMA for Direct Memory Access), then the KERNEL routine "MoveData" uses the fast DMA capabilities of the REU to move data around when required. This will be particularly noticeable when scrolling around, say, a *geoPaint* or *geoWrite* document, when large amounts of data have to be shuffled in and out of screen memory at frequent intervals.

Drivers

The 128 release of GEOS includes some of the input and output drivers promised at a later date in the 64 package. There are new input drivers for a proportional mouse and a lightpen, and many more printers now have drivers written especially for them. I would very much like to try a proportional mouse with GEOS, as control of the pointer is so much more precise than is possible with the 1350 digital mouse.

Of interest to *geoPaint* users would be the lightpen driver, as it is so much easier to draw freehand with a lightpen than a joystick or even a proportional mouse. Before you rush out to buy one, you should bear in mind that the current driver is written for the Inkwell brand of lightpen. Not having experimented with lightpens (I don't even own one), I cannot say just how brand specific or otherwise the driver is. Check before you buy and caveat emptor!!

Possible improvements

Obviously I am very impressed with GEOS 128, but nevertheless I do have some suggestions for improvements.

In *geoPaint*, I would like to see a more flexible implementation of the Circle and Rectangle tools, along the lines of the *Doodle* method. That is, you can stretch, say, a circle either horizontally or vertically to make an ellipse. Click once to define the shape. At this stage you can move the shape anywhere around the screen. Once you've decided on its position, click again to locate the shape and finalise the operation. *Doodle* rectangles work the same way.

I think the Line tool would be better if it too was implemented in the *Doodle* fashion, where you click to locate one end and then every subsequent click defines the other end of a line. This way, it is easy to have a series of lines radiating from one point on the screen. If my memory serves me correctly, Doodle also allows you to readily define the end of a line just drawn as the beginning of a new one. This allows you to move around the screen leaving a series of straight lines behind as you go, thus defining a freehand shape.

The last suggestion I have for *geoPaint* may end up in the too hard file, but I'll make it anyway. Wouldn't it be nice if you could locate the cursor at a specific pixel coordinate on the page? Not the screen - the page. That way, you could always relocate the cursor at any specific location in the document. Perhaps that facility could be extended so that you could specify a centre, X and Y radii and have the program draw a circle, ellipse or arc across the screen boundaries.

Are these the seeds of a new application called . . . let me see . . . yes, *geoCAD*?

In *geoWrite*, the margins seem a bit restrictive to me. You cannot define a left or right margin smaller than about an inch. Also, any pictures imported from a scrap or photo album are placed centrally across the page, and you can't write in the space either side. It would be nice if you could locate the picture where you want it, and write in the surrounding space.

I imagine *geoPublish* will allow just that, and I look forward to trying it out. *GeoPaint* and *geoWrite* work so well together that I imagine the designers will not miss the opportunity to have made *geoPublish* compatible with both so that files may be freely swapped about. If that is the case, the GEOS system is in danger of making other graphics programs obsolete.

I am so impressed with GEOS 128 that I have no hesitation in recommending that it be in everyone's library. Once you have seen what it can do, and how easy it is to control, you will want to use it. It's the sort of program that if you haven't already got a use for it, you will want to go and find or invent one. You've heard of addictive games. Well, this is an addictive application. Don't power up without it!

One last thing. In Australia, we often bemoan lack of product support, particularly in computers and software. I have a happy exception to relate, and I hope it becomes the rule. Due to an error made by a person or persons who shall remain nameless, my Applications master disk was corrupted and I could neither back it up nor load *geoWrite* from it. I rang the distributors, Computermate, and was advised that if I were to send in the faulty disk, they would rewrite the bad side and return it, for a handling fee of $10.00. Considering that the cause was not faulty software but faulty handling, that's a pretty fair deal in my book. Thankyou, Jeff Macaulay at Computermate.

GEOS 128: Published by Berkeley Softworks, Berkeley, California. Distributed in Australia by Computermate Products (Australia), 9 High St., Mt Kuringai, NSW 2080 Tel: (02) 457 8118.

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Datasette Doctor

A review by Eric Holroyd

LOTS OF COMMODORE owners use the Datasette tape drive and many experience some difficulty from time to time with programs failing to load. This can be caused by a number of things, but correct alignment of the tape head would have to be at the top of the list.

With today's fast load systems and the heavy copy protections being used on software, it's vital that the tape drive is "spot on" in the alignment department as well as being clean and free from excess magnetic build-up.

The Datasette Doctor is a new package which contains all you need to service your Datasette unit yourself and also keep alignment problems to a minimum.

Included are two cassettes, a bottle of cleaning fluid, full instructions for use and even a little screwdriver to use when making alignment adjustments.

For a simple clean-up job just insert the cleaning tape into the unit, put a few drops of the fluid in a little hole in the cassette and press "play/record". Run the tape through till it stops and that's it! The tape drive-shaft has been gently buffed clean along with the tape head itself, whilst a spinning magnet inside the special cassette has de-magnetised the head.

This operation is recommended every 20 hours of use to help ensure better loading of tape-based software.

The other tape is a special alignment cassette and has a pointer and scale arrangement for you to cut out and fit to the Datasette by just following the easy instructions. On the tape are five programs and their approximate counter positions are shown on the instruction sheet. You should note the counter positions on your own Datasette as a check.

The programs are:

#1 Slow Baud Rate Alignment Program
#2 Slow Baud Rate Alignment Signal
#3 Fast Baud Rate Alignment Program
#4 Fast Baud Rate Alignment Signal
#5 Fast Baud Rate Saving & Loading Test Program

Run #1 and follow the on-screen instructions. If the alignment is OK the background will show a steady green colour, if it's out the background will turn red and an audible "beep" indicates how bad it is. The more frequent and intense the beep, the worse the alignment. Simple!

If the alignment is out then you run #2 and follow the instructions on how to correct it via the adjusting screw (which is where the pointer and scale come into play). When you've got it right the background will turn green and you're all set. Other "fine-tuning" points are covered in the instructions and it's all pretty simple.

It's best to turn the 64 off and back on before running #3 to check the Fast Baud, but the procedure is similar and if alignment is a little out on this one you make adjustments in much the same way as before but this time using program #4.

To check for High Speed loading and saving, follow the written instructions and load program #5 in which you perform loads and saves on one of your own tapes. Best to use a good brand for this (you should be doing that anyway!)

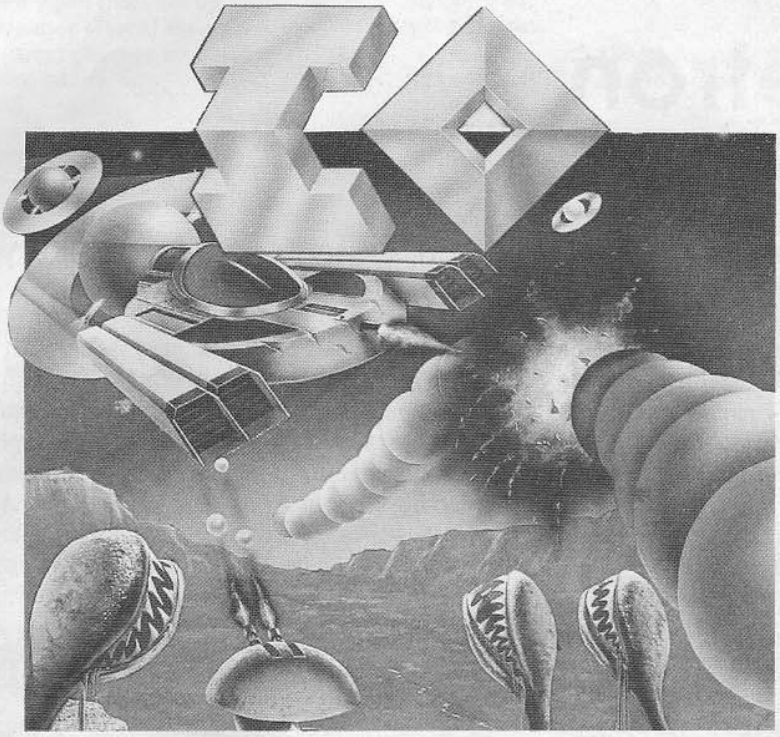
Again, colour changing of backgrounds indicate if there's a problem and such things as
(a) faulty or worn Datasette mechanism
(b) mains or TV interference
(c) faulty Datasette electronics
are diagnosed with the aid of the instructions sheet.

The Datasette Doctor doesn't pretend to be a kit to fix any of those things of course, and you'd need to take the unit to a repairman to get specialist attention for that kind of problem. However, as an inexpensive and simple way to do the ordinary "servicing and alignment" of your Datasette this is the one to get.

> "With today's fast load systems and the heavy copy protections being used on software, it's vital that the tape drive is "spot on"."

It's a Trilogic (UK) product and just before going to press I learned that their disk drive alignment/servicing kit, the Disk Doctor, is available also. With that one, as well as the alignment and servicing programs being on disk, they are all on a cassette too in case your disk drive is so badly out that you can't load a disk. That sounds like a good logical start and although I wasn't able to check out the Disk Doctor kit before press time I think it's got to be a good one based on how good the Datasette kit is.

Trilogic (UK) products are distributed in Australia by Computermate (02) 457-8118. RRP on Datasette Doctor is $34.50 and on the Disk Doctor $59.00.■



by *Eric Holroyd*

THIS FIREBIRD game from Questor is a very fast sideways-scrolling shoot-em- up bearing a marked resemblance to the excellent arcade game *R-Type*.

Graphics (by Bob Stevenson) are stunning and are well up to the standard you'd expect after seeing the guy's work on those superb Compunet demos.

Gameplay itself is fast and furious, and is for one or two players. There are four quite long levels to complete and when you've done that they repeat, but much harder.

You're in control of a little fighter craft which emerges from the mother ship into the first level, a sort of corridor guarded by gun turrets and lasers with whirling "snakes" doing their best to wipe you out. You must fight your way to the large spaceship guarding the way to the next level and destroy it to progress.

Level two is very "jungly" with creepers everywhere and deadly little plants like Venus fly-traps which open up to spit death and destruction. There are also laser-firing bulbs shooting diagonally across the screen which are very difficult to avoid. To get off this level and on to the next you need to zap a grinning skull which protects the exit.

In the third level you're on a red moonscape where beautiful bubbles float all around. Avoid them or you lose a life just by touching one. To clear this level you'll have to avoid lumps of ectoplasm being chucked at you by a giant rocket launcher. Weird but very interesting, and those graphics are something else.

Now you've made it through to the last level where a tangle of blue spines try to keep you from moving anywhere. Another whirling snake guards a monster fetus and you'll need a quick trigger finger to shoot your way through here. Having done all this you start again on level 1 but it's a great deal more difficult this time.

Throughout the game there are little green "pick-ups" which turn into smart bombs if you run into them. These then destroy all the nasties on the screen. If you shoot a green pick-up four times it'll turn into a weapon. If you already have two weapons the greenies turn into "orbs" for you to carry for protection and also gain bonus points. Extra lives are awarded at 20,000 points and then every 50,000 points.

Thankfully there's a pause feature for meal breaks etc and if you're doing too badly to carry on the "Q" key lets you quit to start over.

IO is a very well done game with fast action and should keep you busy for a very long time. It's extremely demanding to play and could well become a computer classic. I liked it a lot and recommend it.

Distributed by Questor. (02) 662 7944. Disk $39.95 RRP. Tape $29.95 RRP. ■

Magnetron

by *Eric Holroyd*

Here's a combination arcade shoot-em-up/strategy game in which you're controlling a droid named KLP-2.

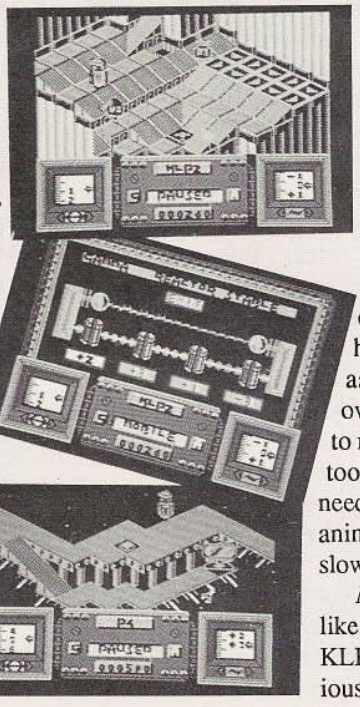
His job is to de-activate and destroy four reactors on each of eight satellites which are all controlled and guarded by other droids. The satellites have weapons firing destructor beams at Earth and they've got to go.

KLP-2 loves taking things to bits (he's described as an engineering droid!) and is also something of a computer hacker. There are computers spread throughout the satellites and you've got to help him hack into them and access confidential information. This is all useful stuff like satellite positioning, types of droids inhabiting it plus the weapons and systems they're using. The knowledge you gain is then helpful during the mission.

There are several weapons to use including frisbee-like disks, boomerangs, mortars and a bouncing bomb. You'll need to learn how best to use each one.

For close combat with a guard droid use a feature called "Grapple". To get this you centre the joystick (or the centreing key if you're playing direct from the keyboard as so many games players like to do) and press fire till the word GRAPPLE comes up in the control panel. At this you charge into your opponent whereupon you'll get a display of data about that droid plus a grid of icons showing his security code (and each guard has a different one!) which prevents him become successfully grappled. You have to crack this code before a countdown self-destructs him and you too.

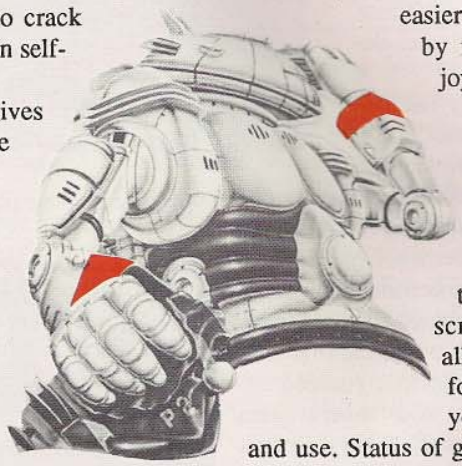
Surviving a "grapple" gives KLP-2 the energy from the enemy droid.



Several other interesting features are built in to this stage too and it's here that you can gain extra lives to help complete the quest.

Your little super-droid can also build clones of himself to fight the nasties as well as improving his own weapon status. He needs to recharge his energy batteries too and you'll know when he needs this by his expression and animation rate. If he's upset and slow he needs a recharge.

Magnetron's gameplay is like a good arcade game and has KLP-2 bouncing around the various screens looking a little like a cross between Thingonaspring and Onemansdroid. The screens themselves are done in that strange *Spindizzy/Marble Madness* perspective where you have to rethink the way you push the joystick for direction. An easy way to do this is suggested in the game's booklet which says that you can make it easier on yourself by rotating the joystick 45 degrees. It works too.



The control panel at the bottom of the screen shows all kinds of information for you to assess and use. Status of guard droids, nuclear reactors, weapons data, KLP-2's charge/weight/drive strength is all displayed and there's much more. It's all interesting stuff and most absorbing too.

Magnetron is a good fast-action game and the strategy component gives lasting interest. Definitely worth a look.

Distributed by Questor (02) 662 7944. Disk $39.95 RRP, Tape $29.95 RRP. ■

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Superbase — bits and pieces

This month's article will be a potpourri of tips, suggestions, and corrections.

by Peter Gallen

FIRST A CORRECTION to one of the programs in the April issue. The program titled 'FIG.3 Transfer between databases' will not work on two disk drives as is. I discovered this problem late one night (when program bugs are most active) and due to other commitments it was several weeks later before I could work on it. As it stands the program will loop continuously but only copy the first record in your file! I left mine on all night to prove this. The day I sat down to tackle the problem I received a call from Perth - yes, the bug had spread.

The problem is due to the fact that when you switch databases, either on one or more disks, *Superbase* returns to the beginning of the file you start with. This results in lots of activity and flashing lights, but actually what happens is that your first record is being copied over and over.

The fix is not too difficult, you have to force *Superbase* into selecting the next record each time it returns from the destination database. If your key field consists of a sequentially numbered series eg. A001,A002,.....A999 this is achieved as per the program in FIG.1 - note the extra lines 25 and 75 which correct the published program.

This is the only case I've come across where a program tip in *Superbase:The Book* has been incorrect.

Import error

I've had several queries from users who have lost data following an Import error. These errors are not apparent immediately and usually occur at the end of the Import and are most often 'Invalid FMS Parameter' types.

On returning to the menu you can interrogate the database with no problems, however once powered down all data is lost so that at the start of your next session your file will not register the records. They simply aren't there anymore!

The reason for the mysterious disappearance of data you know was there and have selected, sorted, etc, previously is that any error encountered by *Superbase* during an Import will prevent essential control data being written to disk. At the start of a new session *Superbase* cannot locate your valuable data.

The solution is to 'store' immediately after such an error. A good motto to adopt is ' if in doubt...store' - it can't do any harm and can save you from calamities.

Figure 1 - Transfer between two databases

```
10 rem correction to program in april issue
20 database "dat.one",8,0:file "file.1"
25 n=10000
30 select f
40 a$=[key]:b$=[name]:c=[date]
50 database "dat.two",9,0:file "file.2"
60 clear:[key]=a$:[name]=b$:[date]=c:store
70 database "dat.one",8,0:file"file.1"
75 n=n+1:x$=str$(n):k$=right$(x$,4)
80 select k$:goto 40
```

Programmed user input

Now I'd like to tackle a new topic - programmed user input. This can be useful when somebody else is going to be using your system - you can request data such as a password or date, or hide/skip fields, or control the sequence of data input if required.

I've used this to input one item of data and have it automatically copied into vacant fields. This device can save a lot of repetitive typing and associated errors. With appropriate code you can control the type of data entered eg. a password must consist of a certain number of letters, or may not start with a particular

Figure 2 - Programmed address input

```
10 rem program to auto insert data into
address file 15 file "addresses"
20 clear:select c
30 ask "code" ;k$:select c
40 gosub 600
50 [key]=k$
60 ask "name";nm$:select c
70 gosub 650:[name]=nm$
80 ask "street";sr$:select c
90 gosub 700:[street]=sr$
100 ask "city";ct$:select c
110 gosub 750:[city]=ct$
120 ask "state";st$:select c
130 gosub 800:[state]=st$
140 ask "postcode";pc$:select c
150 gosub 850:[postcode]=pc$
160 store
170 end
600 if len(k$)>6 then 30
610 if k$="." then menu
650 if len(nm$)>30 then60
660 if nm$="." then menu
700 if len(sr$)>25 then 80
710 if sr$="." then menu
750 if len (ct$)>15 then 100
760 if ct$="." then menu
800 if len(st$)>3 then 120
810 if st$="." then menu
850 if len(pc$)>7 then 140
860 if pc$="." then menu
870 return
```

Figure 3 - Auto input

```
10 rem example to auto input
repetitive data
20 file"album"
30 clear:screen0:select c
40 ask "artist";a$
50 if len(a$)>20 then40
60 [a1]=a$:select c
70 [a2]=a$:select c
80 [a3]=a$:select c
90 [a4]=a$:select c
100 [a5]=a$:select c
110 [a6]=a$:select c
120 store
130 goto30
```

letter.

A few examples will illustrate these features:-

This program allows only data input that is equal to or shorter than the field length. Your data appears at the top of the screen in the command area until you press return whereupon it is entered into the appropriate field or, if incorrect, the question is repeated.

This program is one I've used for programmed input for a discography where artist or dates may repeat several times. It assumes 6 tracks per LP record, by the same artist.

Unfortunately there are some problems associated with programmed input:- a string of numbers in a numeric field will automatically be formatted with two decimal places and a space for the sign. there are two ways to overcome this. 1.) Do not use numeric fields for postcodes,etc. and 2.) type a space before the number.

Numeric and date fields can accept 0, but text fields must have at least one character, hence in Figure 2 the "." is used as a terminator for data input. You cannot edit the fields as you go as is possible using 'enter' or 'select r'. The way around this is to recall the record later for editing. Of course you could include positioning commands to cause the input to be put directly into the field position on screen. For this you must also specify the maximum length of the input field with the '&' command.

This program takes advantage of the fact that the 'wait' command does not display the input key. I've used the following short program from *Superbase:The Book* to provide simple but effective password protection to several files containing personal data.

Figure 4 - Use of passwords

```
10 rem a password program allowing
three attempts at access 20 at=3:rem
no. of attempts
30 ln=5:rem length of password
40 for j=1 to at
45 x$=""
50 display chr$(47)@5,5"Enter pass-
word:";@+" ";
100 for i=1 to ln
110 wait a$
120 x$=x$+a$
130 next i
140 if x$<>"super"then display
"Failed!";:goto150
145 display "OK!":goto180
150 display @5,10
"Attempt";&1,0j;"of";&1,0at;"fai
led" 155 wait
160 next j
170 display @5,12 "Attempts
failed --- access denied!" 175 quit
180 load"menu"
```

C64/128 to Amiga

I've had inquiries about transferring data from a C64/C128 environment to an Amiga running *Superbase*. While I've not used *Superbase* on an Amiga, several friends assure me that the programming language and general 'feel' are very similar. If this is so then I would suggest setting up a duplicate file on the Amiga and use Export to create a sequential file on the C64/C128 system. Then convert this file to true ASCII using one of the many public domain programs available. The hard part is transferring the file to the Amiga disk. For this either a modem or a utility similar to 'The Big Blue Reader', could be used. I believe there are programs available to convert C64/C128 files to Amiga format - consult the Amiga gurus about this. After this step all that's needed should be a simple Import.

If you have suggestions for topics or application problems, please share them. We'll be happy to discuss them in this series. Write care of Australian Commodore Review or directly to me at P.O. Box 115, Rozelle NSW 2039. ■

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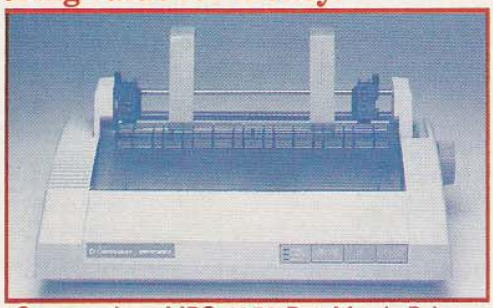

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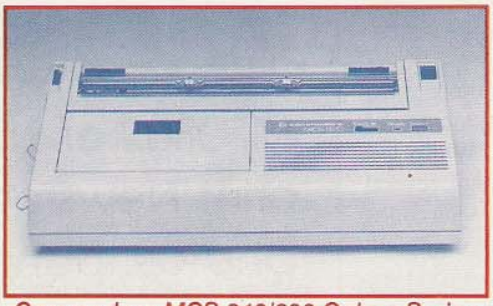

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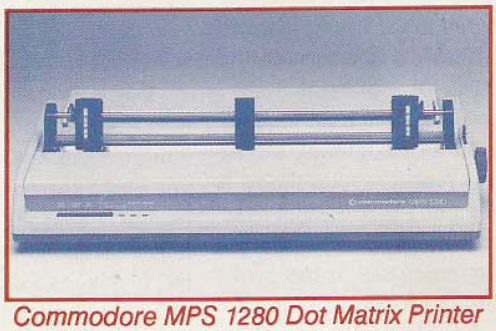

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This document was produced on the Commodore LP806 printer.

CPM update (the printer driver)

by Frank Paterson

In the April and June issues I discussed some of the problems caused by ASCII translation in Commodore's CPM printer driver, and how to fix them.

Simply put, the problem was that an ASCII printer would print garbage, and basically, the fix was to modify the printer driver in the CPM system file so that ASCII translation never took place.

The modification fixed the printer problem, but there were other things I wasn't happy about, particularly in the 128/CPM/*WordStar* combination.

For starters, printer output from *WordStar* was pathetically slow. Likewise, the keyboard response and screen-updating were slow and it took an inordinate amount of time for a *WordStar* menu to change. Also there was no key-repeat, which meant that you had to repeatedly press the cursor keys instead of just holding them down to keep the cursor moving. Backward, eh?

All of these deficiencies are addressed in a new version of the CPM+ system file, dated MAY 87. Its main features are an interrupt-driven keyboard, faster printing through a resident printer buffer and the ability to run a RAM disk if RAM expansion is present.

The big bonus is in an accompanying program called CONF.COM. It has been written to complement the latest version of CPM, and allows customisation of 16 different features of CPM, including ASCII translation and key repeat. It also allows you to switch off the 40 column screen if you don't need it, giving an instant system speed increase of about 10%.

CONF commands

Let's have a look at some of the CONF commands. The general syntax is:-

CONF command = parameters
or if multiple commands are to be specified,
CONF command1 = parameters, command2 = parameters, etc.

The easiest and simplest command to execute and show an immediate result is the **40 column toggle**. If you turn the 40 column screen off with CONF 40COL = OFF and then TYPE a file, the increased speed at which text appears on the screen is immediately apparent.

● **The CURSOR command** is interesting. You can define a steady cursor or a flashing one, either fast or slow. You can also define the cursor shape by telling the system on which scan lines to start and finish painting it. For example, CONF CURSOR = SOLID 3 5 will result in a steady, thick, bar-shaped cursor appearing mid-line.

● **The FEEL command** adjusts keyboard response, and is tied in with another parameter, the BAUD rate, which is effective whether or not you are actually communicating on line. The keyboard is interrupt-driven, and the number of interrupts per second is three times the BAUD rate. To stop the keyboard being overserviced at the expense of processor time and system speed, the system is instructed not to scan the keyboard at every interrupt. FEEL sets the number of interrupts that are not used between those that are. Too many keyboard scans, and you will suffer from what appears to be keyboard bounce - double characters will occur because you can't lift your fingers off the keys fast enough. Too few, and you will miss characters as you type between scans. It's easy to find a balance between the two.

● Also tied in with FEEL is **REPEAT**, which sets the repeat rate of the keys. Starting at the top, the higher the BAUD rate, the less time the CPU has to do other things, so a moderate to low Baud rate is in order unless you're on-line and after fast communications. The default BAUD value is 300, and everything seems to work best on that setting. Set FEEL to get the keyboard response right - you will need to change it if you change Baud rates. Finally, set REPEAT to suit your preference.

How can you give your MPS802 or 1526 true descenders? What about two NLQ fonts? Or perhaps signs using 26 Fonts? And the ability to print Doodle, Printshop & Printmaster Graphics?

Of course, if you do intend to go online, then BAUD will be dictated by your communications requirements, and the other parameters will have to be adjusted to compensate. It sounds complicated, but it's not really, and it has the advantage of giving you a very flexible, easily customised system.

● The most important CONF command for me was the **ASCII control, PRT.** This command replaces in five seconds all the work I did in two months in trying to get the aforementioned printer driver right, and has the advantage of being instantly reversible, whereas the modification was very much one-way.

PRT1 = CBM and PRT1 = ASCII (secondary address) allow toggling of printer output between PETSCII and ASCII, with the added advantage that you can specify a secondary address with the ASCII parameter. This has significance with some printers - in my system, I can command the interface, which is a useful facility if I'm trying to de-bug printed output. If I send CONF PRT1 = ASCII (3), then output to the printer is in ASCII, and the secondary address is 3, which makes the interface write all characters as hex ASCII codes, including those not normally printable. Not often used, but indispensable when needed.

● Then there's the **DATE** function so you can stamp files written to disk with date and time. (I should begin doing that!!)

You can also change the background, border and character colours, though you don't normally need CONF.COM to do that - it can be done directly from the keyboard. Try CONTROL with the numbers across the top row of the keyboard and also on the keypad. Or with this program, do it with CONF BACK (or BORD or CHAR) = colour number.

You can even elect to have an electronic keyclick and adjust its volume with VOL = 1, 2, 3.... etc. 15 is the loudest, 0 turns it off.

PROFILE.SUB

One thing that CONF.COM misses out on is the ability to save your modified CPM system file to disk, so it appears that you have to run CONF and set up your preferences every time you boot up. The good news is that all is not quite as it seems. There exists a CPM file called SUBMIT and on booting up the system it will automatically execute programs and commands contained in an associated special start-up file called PROFILE.SUB.

The set-up is simple and goes like this. On your program disk, *WordStar* for example, place the CPM system files (CPM+.SYS and CCP.COM), and also CONF.COM and SUBMIT.COM.

Having previously worked out your customisation of CPM to suit your application, use ED.COM or any wordprocessor to create a file which contains your customisation instructions. You must call this file PROFILE.SUB.

On my *WordStar* disk, my PROFILE.SUB file looks like this:-

```
CONF
40COL=OFF,FEEL=2,PRT1=ASCII
(5),REPEAT=3,VOL=0,BACK=6,CHA
R=7 WS
```

When I place my *WordStar* disk in the drive and type BOOT, CPM loads normally and on completion, automatically looks for PROFILE.SUB (It always looks for PROFILE.SUB first thing, and if it is not found, resumes normal operation and you get the system prompt, >A). If PROFILE.SUB is found, the system loads SUBMIT.COM and then executes any program or command (and parameters) it finds in the PROFILE file. Here, CONF is the first command and the rest of the line contains the associated CONF parameters which set up CPM to my liking. After executing CONF and setting up my system, SUBMIT continues to check through the PROFILE file and finds WS, which is my *WordStar* file, and then loads and runs it automatically.

So there it is - a self booting applications disk which modifies the CPM operating system to suit the application and the user's personal taste. The technique is not new, but you can see that it has possibilities, and here it has proved quite useful. You can put as many programs as you like on a disk and execute them automatically in a desired sequence. Neat, eh?

There are other CONF commands too, but to go through them all would be tedious and rather pointless unless you have the program to work with. CONF is in the public domain, and should be available from the First Osborne User Group here in Sydney, along with a heap of other CPM goodies of both general interest and specific to the 128.

I hope this article has sparked some interest in CPM, a rather neglected but powerful aspect of the 128. Being able to fiddle around with the operating system like this is a treat that most ROM based computer users miss out on.

Special thanks to Arthur O'Connell of Cabramurra for his kind help in providing information for this column. ■

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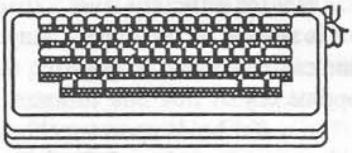
The keyboard buffer

by James Soo



YOU MAY NOT have thought about it before, but the keyboard on your computer is just another peripheral. The chip that controls the computer is not directly connected to the keyboard; it has to talk to the keyboard through an interface chip, much like it talks to a disk drive or printer.

Keystrokes don't enter the computer directly. They are funneled into the 'keyboard buffer', an area of memory which can be directly accessed by the chip which controls the computer.

Sixty times a second your Vic or 64 interrupts whatever it is doing for some housekeeping. The jiffy clock (which registers every sixtieth of a second) ticks once, the screen is refreshed, and the keyboard wiring is checked for a signal that a key was pressed.

But before the character is printed on the screen its ASCII value is put into the keyboard buffer at memory locations 631-640. At the same time, the value in location 198, which keeps track of how many characters are in the buffer, is increased by one, unless it has reached its maximum of ten. When you're typing, the letters aren't printed directly from the keyboard to the screen; they make a short stop in memory. In immediate mode (when a program is not running), the characters are pulled out of the keyboard buffer immediately and put on the screen.

But when a program is running, the characters are saved up until the program either ends or tries to INPUT or GET. You can see how this works if you enter FOR J = 1 TO 5000 : NEXT, a simple delay loop. After pressing RETURN, hit a key twenty times. When the loop ends, you should see ten (not twenty) of the letters on the screen.

That's because the keyboard buffer comprises only ten bytes. Once it is full, nothing more is added until the buffer is accessed with an INPUT or GET.

Think of keystrokes as raindrops falling through a funnel (the interface chip) into a tiny bucket (the keyboard buffer) which can hold only ten drops at a time. When the bucket is full, no more raindrops will fit until the bucket is emptied.

With a few Pokes, we can control the keyboard buffer and its contents.

Emptying the buffer

Manipulating the buffer at 631-640 and the byte at 198 (number of characters currently in the buffer) can solve some common programming problems.

For example, you're playing a game and it asks PLAY AGAIN (Y/N)? and you type Y. Nothing seems to happen for whatever reason; maybe the computer is setting up variables. So you press Y again. A second later you see INSTRUCTIONS (Y/N)? flash briefly on the screen, followed by the first of 20 pages of instructions. You didn't want the instructions but you got them anyway.

The problem is that the second time you typed Y, it was stored in the keyboard buffer. When your computer got to the instructions prompt, it went to GET a character and found a Y right there. YOU get 20 pages of instructions and then yell unmentionables at the computer, to the curiosity of your neighbours.

A variation on this can happen in data entry (say, a chequebook balancing program). Perhaps you mean to enter a cheque for $36 but you miss the top row of keys, hitting E and Y by mistake (some mistake, eh?). You see ERASE

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EVERYTHING for a moment, followed by ARE YOU SURE (Y/N). The Y in the buffer answers the question for you and three hours of work are destroyed - DON'T TEAR YOUR HAIR OUT !!!!

The solution is simple. Since location 198 holds the number of characters in the buffer, POKE 198, 0 tells the computer there is nothing there at the moment. Use this Poke before INPUT or GET statements to eliminate extra characters in the buffer.

Press any key to continue

Since location 198 holds the number of keys pressed, we can use it for a user-defined delay.

A title screen or page of instructions often includes a line like PRESS ANY KEY TO CONTINUE, since some people read faster than others.

The usual way of checking for a key press is to use a GET statement. To save a little memory, use WAIT instead. To be safe, clear the keyboard buffer first. POKE 198, 0 : WAIT 198 , 1 is a substitute for 50 GET A$: IF A$ = "" THEN 50, uses less memory, and doesn't need a whole line of its own.

The same technique can be useful in immediate mode. For example, you might want to use all 25 lines (23 on the Vic) to print variable values or PEEKS. Use a FOR-NEXT loop to print the values and then WAIT 198, 1. Without the WAIT command, the screen fills up, scrolls to print READY, scrolls again, and you lose the first few lines.

Filling the buffer

POKEing numbers into the keyboard buffer (and location 198) can fool the computer into thinking certain keys have been pressed.

Perhaps you're writing a game with nine levels of difficulty. When it starts, the player is asked to choose a level. Before the INPUT statement, POKE 631, 53 : POKE 632, 157 : POKE 198 , 2 to set up a default value of level 5. When you reach the question about levels, the computer finds a 2 in 198 (which makes it think two keys have been pressed), gets a character "5" (ASCII VALUE 53) and prints it. Next, it finds an ASCII 157 (cursor left). The user just presses RETURN for difficulty level 5 (because the 5 is already on the screen). Any other value can be entered by pressing the appropriate key.

The buffer holds up to ten characters, which provides a lot of flexibility for setting default values in programs which use INPUT (for obvious reasons, you can't do this with GET). Just remember to use ASCII values, starting at 631 and POKE the total number of characters into 198. You can even change the character colour or turn reverse on.

The dynamic keyboard technique uses a variation on this idea. You fill up the keyboard buffer with carriage returns (ASCII 13), print BASIC commands or program lines on the screen, position the cursor, and end the program. The computer sees END and goes into immediate mode. Because there are 13s in the buffer, the commands on the screen execute. You might, for example, add DATA statements by printing an open line number, the word DATA, and some information you want to build into the program. Underneath the new DATA line, PRINT RUN. Position the cursor, POKE 13s into 631 and 632, and a 2 into 198. When the program ends, the DATA statement is added to the program and the program runs.

You could also list-proof a game which uses joysticks but not the keyboard. At the beginning of the program, POKE the numbers 78, 69, 87 and 13 into the locations 631-634. POKE a 4 into 198. If the game player presses the STOP key the letters N,E, W appear and the program is gone. Or POKE the values for R, SHIFT-U (the abbreviation for RUN), and the carriage return. Any time you press STOP, the program will stop for a moment and then run.

More keyboard memory areas

Near the keyboard buffer are some other memory locations related to the keyboard. Location 646 is the current character colour, which can be poked in the same way you change the border or background colour.

Location 649 determines the size of the keyboard buffer. For the minimum buffer (one character long), POKE 649, 1. This can be useful when you don't want the buffer to fill up with extra characters. To get rid of the buffer, POKE 649, 0 and try typing something. NOTHING HAPPENS. By setting the buffer length to zero, the computer has nowhere to temporarily store the characters. It's as if we pulled the bucket away from the funnel. You can regain control by hitting RUN-STOP/RESTORE. You should not put a value higher than ten in this byte because some important vectors can be overwritten.

The repeat flag is stored in 650. POKE 650, 128 to make all keys repeat, POKE a 0 to go back to normal (space bar and cursor keys repeat). A 64 in 650 disables all repeating.

Thus, if you're writing a rapid fire action game you might want to make all the keys repeat. You would put a 128 into 650 and leave the buffer size at ten. But for a game where movement has to be precise, you could lower the buffer size to 1 or 2 and eliminate all repeating keys.

In an educational program for children, you might want to get rid of repeating keys with a POKE 650,64. For a spreadsheet, you'd leave the default values, so the cursor keys would repeat and allow quick movement from cell to cell. For word processing, though, you might as well allow all keys to repeat. Controlling the behaviour of the keyboard buffer and related memory locations can help you create programs which are both efficient and convenient to use. ■

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Design your own operating system

Custom made systems can be fun, and very useful. But how do you go about it? Andrew Baines explains.

WHEN I FIRST had a long look at an Amiga in real life, being wholly truthful, I didn't know what to think. Here was this computer that came up with no less than a great graphic screen, just to say 'insert the Kickstart disk,' and later, 'insert the Workbench disk.' Then it had the gall to read a disk straight after its presence was felt in the drive, and put an icon on the screen representing this particular disk. I'm also told that the computer controls the software driver for the printer, not the individual programs.

After I'd used it for a while, I decided I would never again touch one of these gruesome things that did everything for you - and with that statement came the realisation that I, for the last four years, have been trying desperately, against all memory restrictions, against all of the myriad of quirks in it, to make my humble C64 do just that - everything without being told. I quickly changed my perception of the Amiga, and am anxiously awaiting the day when my bank statement will be enough.

I hate computers that have to be booted. Which is why I like the Amiga - you only really have to boot once, and after that you boot the different programs you want to use at the press of a Control, Amiga, Amiga. That is also why I hate the Apples at school (all six between 1200 students). They have to boot their DOS (Disk Operating System) before you can save anything. I am of the opinion that maximum flexibility should be built into a computer, so that you can customize it, without having to boot up again. Which is why I hate my newly created operating system - it takes 25 seconds to boot - I really am going to have to obtain Dolphin DOS pretty quickly. But if I'm careful about what I give it, it doesn't crash too many times a session (it all depends on the program I'm working on).

The reason why I developed this new operating system is to accommodate my assembler PAL, a modern miracle of program excellence. The trouble is, my Fast Load cartridge from Epyx modifies CHRGET, that routine in zero page memory that your BASIC routines call whenever they want to know what the next instruction for them to process is. And so does PAL, meaning that after one assemble, they disagree vehemently, and things start on their downward slide.

First, the program you just assembled disappears from the memory inside that little grey box with buttons, then you can't fix it with your inbuilt monitor Epyx so kindly included, as the computer suddenly decides to accept no input at all, not knowing who wants it. Afraid to send it out at all - maybe a fight between the two rival beasts out there in RAM will engulf the ROM, and we could never have that. Enough satire.

The first thing I did to solve the problem was to try turning off the cartridge, and use PAL by itself. It worked. Well, now what we need is a shell operating system to get around the old one, provide convenience. Obviously, we start with a fast boot. I could not possibly hope to live without a fast boot. It's just that I can't stand the slowness of the 1541's DOS. I lived with slowness for two years, first with the tape, then with the disk drive. I can't take any more without going absolutely crazy.

A fast boot was found. From the old Commodore Magazine. It had been relocated to accommodate Commodore's DOS Wedge. And PAL. I soon found that by using my newfound operating system, things crashed again. DOS Wedge uses CHRGET.

Since I had no other DOS Wedge-type program, I decided to put a monitor in, to relieve this problem. I relocated the fast boot to $8900, put the monitor at $C000, and PAL resides at $8E00 (I think?). A lot in between. Masses. And every time something I assembled didn't work at all and refused to let go, I had to reboot. Not convenient. Very frustrating. There are almost large holes in my walls from my head to prove it. Almost.

An answer had to be found. The cartridge auto start, of course! I adore the people at Commodore sometimes. Only sometimes, mind you. Every time the computer does a cold start, it checks to see if a cartridge is in place. If so, control is passed to this new ROM in memory. Why don't we imitate a cartridge! That's just what I did, and with a few extras included.

Over the next few issues, we're going to look at the many ways Commodore has left for us to create our own routines. The first one we will look at is the main workhorse, the reset routine - the cartridge autostart.

When the Kernal (the ROM chip that uses $E000 - $FFFF) receives the power-up message, it checks to see if a cartridge is in memory. The check is made by comparing the string it has to the memory at $8004. The string the Kernal has embedded in it is $C3, $C2, $CD, $38, $30. This, when decoded, says CBM80. Now that we have this in memory, and the kernal has seen that our routine warrants the computer's attention, it JuMPs indirectly to the location pointed to by $8000 and $8001. And whenever you press the restore key, it uses the pointer at $8002 - $8003 as the new NMI interrupt vector.

The following routine is the basis of

the setup procedure I use in my operating system:

30 *= $8000 ; Begin assembly at $8000

40 .byt <start,>start,<setnmi,

>setnmi,$c3,$c2,$cd,$38,$30 ; Place the starting addresses of the cold start and warm start routines, and the string as the first thing in $8000.

80 start SEI ; SEt Interrupt disable flag.

90 JSR $FF81;Jump to SubRoutine to initialise the screen.

100 JSR $FF84;Jump to SubRoutine to initialise I/O.

110 colour LDA #0 ; LoaD the Accumulator with the value zero.

120 STA 53280 ; STore the Accumulator in 53280, the border colour. We are going to set the colours to black.

130 STA 53281 ; STore the Accumulator in the background colour.

140 LDA #5 ; LoaD the Accumulator with the value 5, which represents green. Unambitious, but practical.

145 STA 646 ; STore the Accumulator in the current colour code location, changing the current colour to green.

150 LDA #127 ; LoaD the Accumulator with the value 127. These next few lines protect this routine, and any above it, from BASIC.

152 STA 52 ; STore the Accumulator in 52.

154 STA 56 ; STore the Accumulator in 56.

156 LDA #255 ; LoaD the Accumulator with the value 255.

158 STA 51 ; STore the Accumulator in 51.

159 STA 55 ; STore the Accumulator in 55.

160 LDA #$73 ; This next part of our routine is exactly the same as the kernal's powerup routine. It prints the powerup message. You may not want it, that's understandable. To print a message, place a zero after it, LoaD the Accumulator with its low byte, the Y register with its high byte, and JSR to $AB1E.

170 LDY #$E4 ; LoaD the Y register with the high byte.

180 JSR $AB1E; Jump to SubRoutine to $AB1E to print the message.

190 LDA #$77 ; This small section prints the number 30720 as the number of bytes free. LoaD the Accumulator with the value $77 - the high byte.

200 LDY #$ff ; LoaD the Y register with the low byte.

210 JSR $BDCD ; Jump to SubRoutine to $BDCD to print a number.

220 LDA #$60 ; LoaD the Accumulator with the value $60. Finish off the bottom line.

230 LDY #$E4 ; LoaD the Y register with the value $E4.

240 JSR $AB1E ; Jump to SubRoutine $AB1E to print a message at $E460.

250 JSR nmi ; Jump to SubRoutine to nmi. Set up the interrupts.

255 CLI ; CLear Interrupts flag.

270 JMP $E386 ; Start BASIC.

280 setnmi PHA:TXA:PHA:

TYA:PHA ; This is where the computer comes when the RESTORE button is pressed. The above instructions save the registers in the stack.

281 LDA 653 ; I like to have the option of disabling my operating system, as some programs I write tend to get out of control, and I don't like switching off and on - I'm told that doesn't go down well with the VIC chip. In this section, we test for the Commodore key. If it is pressed, location 653 will hold a two.

282 CMP #2 ; Is it two?

283 BNE warm ; If not, continue.

284 STA $8005 ; It was two, so a complete system reset is required. Disable the cartridge message CBM80.

285 JMP 64738 ; Reset system completely.

290 warm JSR nmi ; This is the normal RESTORE key routine. I don't like pressing RUN/STOP with it, so this routine doesn't test for the STOP key.

292 LDA #147 ; LoaD the Accumulator with the value 147, to clear the screen.

294 JSR $FFD2 ; Print the Clear Screen.

296 JSR $E386 ; Start BASIC.

300 PLA:TAY:PLA:TAX:PLA:RTI ; I have the feeling that saving the registers and loading them again at the end is a little futile, as the BASIC routine may take complete control. I could be wrong, it's best to be safe.

310 nmi LDA #$39 ; LoaD the Accumulator with the value $39. My fast boot needs $8939 to be loaded into the LOAD vector at $0330 at every major catastrophe.

320 STA $330 ; STore the Accumulator in the low byte of the LOAD link.

330 LDA #$89 ; LoaD the Accumulator with the high byte...

340 STA $331 ; And STore the Accumulator in the high byte of the link.

350 LDA #<interrupt ; LoaD the Accumulator with the low byte of the routine labelled 'interrupt'. I haven't included this routine here, suffice to say that it is a function key routine, with a few extras.

360 STA $314 ; STore the Accumulator in memory location $314.

370 LDA #>interrupt ; LoaD the Accumulator with the high byte of interrupt.

380 STA $315 ; STore the Accumulator in memory location $315.

390 color LDA #0 ; LoaD the Accumulator with the value zero. Again, we're setting the colours. In the interrupt routine mentioned above, F2 changes the screen colours. It stores the result in the memory location held by the zero in this instruction. The same thing occurs for the first colour routine.

400 STA 53280:STA 53281 ; STore the Accumulator in the border and background registers.

405 LDA #5:STA 646 ; Set the Character colour to green.

410 RTS ; Return from Subroutine.

As you can see, there is a little more to it than at first glance. Of course, this is presented as a shell. Your own personal preferences could be added very easily - especially in the realm of the function keys, and that is what I'll talk about next time. ■

Panes

by Andrew Baines

Andrew Baines looks at a flexible new window system that allows messages and menus and is easily used through BASIC.

ONE OF THE MOST annoying aspects of writing a new program that is totally user-friendly is formatting the screen. Screen formatting is always difficult at the best of times, but on the Commodore 64 it is particularly difficult. This is because Commodore have chosen to control the cursor by actually printing codes, which the screen editor picks up and uses to adjust the cursor. BASIC's INPUT statement is the major problem, as the end-user can destroy a carefully printed screen in one press of the SHIFT+CLR/HOME button.

There are two basic screen formats available from BASIC - low resolution or text, and high resolution. This program uses the low resolution screen; in a future issue I will show you a way of displaying eighty columns on a high resolution screen. But more of that later.

This program puts a window on the screen, according to variables that you must give it. These variables control the position, size and shape of the box, in both the X and Y directions, the colour of the box, whether or not the window is to be treated as a menu, and whether or not the screen and colour memory is to be saved before the box is printed and restored after the user is finished with the window. That's an awful mouthful, so we'll look at these, one at a time.

The box

The box (window) can be positioned by defining the X and Y position of the top left and bottom right corners. The top left X position ranges from 0 to 37, but you really should have it more away from the right border than 37. The top left Y position ranges from 0 to 23, but, once again, you should never come that close to the bottom border for the top of the box.

Calculating the bottom right coordinates is something else. These have the same restrictions as above (X 0-37, Y 0-23), but are vastly different from the top left positions.

The bottom right X position takes into account the box around the window, so generally adding one will suffice (the range is from 0 to 37). The bottom right Y position is calculated by adding up the number of lines you wish to print, subtracting one, and adding that number to the top left Y position. (This program was my first attempt at structured programming - I have a long way to go).

Now that the window is in the right place, we can colour the box that surrounds it. If you don't like the characters I've used for the box, you can change them in the source code and assemble it, or follow the directions shown in the BASIC loader. The colour of the box can be any of the sixteen colours available on the Commodore 64, and will not affect the colour of the text.

The menu option, when off, accepts one push of the joystick button (port two), and returns to the controlling program. When the menu option is taken, each line of the window is treated as a selection. Moving the joystick (port two) down will move the reversed selection bar down, and likewise for up. Pressing the button will leave the selection number in the Accumulator, and end the program. Getting at the contents of the Accumulator from BASIC is easy, a PEEK (780) will give you the selection number, which ranges from 1 to the number of lines of text in the window.

The last variable is the screen and colour memory save. If you want your window to be removed from the screen after it has finished doing business with the user, simply turn this feature on. If you would like the window to be left on the screen, leave this feature off.

Filling the box

The text for the window can be riddled with as many control codes for colouring the text as you wish, this won't affect the box colour at all, and will be kept throughout the window if desired (just don't change it!) The end of a line of text is defined with a zero byte, and the text for the next line must follow immediately after the zero. Don't worry about filling in the distance between the end of a line of text and the right side of the box with spaces, this is done automatically.

Using panes in your programs

The basic loader will put the program at $C544, or 50500. It occupies up to $C800, and from $C800 to $CFFF is used as a buffer for storing the screen and colour memories if the restore screen option is taken. An SYS in BASIC to 50500 will place a window on the screen according to the parameters after the SYS. Here is the format for the SYS:

SYS 50500, XTOP, YTOP, XBOT, YBOT, BOXCOL, MENU, SCREEN, TEXT$

Where XTOP is the top left X position, YTOP the top left Y position, XBOT the bottom right X position, YBOT the bottom right position, BOXCOL the colour of the box surrounding the text, MENU the menu status; 0 - window is not a menu; 1 - window is a menu, SCREEN the screen status; 0 - leave on screen; 1 - Restore screen, and TEXT$ is the string of text for the menu. TEXT$ can be any string or strings (put a "+" in between each string), and must have zeroes in between the lines of text.

Each variable (except TEXT$) may be a numeral or BASIC variable, eg 'A' or 18 will have the same effect as long as 'A' equals 18.

The source code may be typed in and assembled, and contains all the explanations for the program.

Have fun, and don't forget to keep sending those ideas in to me:

Andrew Baines
18 Roma Avenue,
Wallacia 2750.

```
1000 sys700
1010 .opt oo
1020 ;
1030 ;******************
1040 ;*                *
1050 ;*   p a n e s    *
1060 ;*                *
1070 ;*   (c) 1988     *
1080 ;*                *
1090 ;* micro creations *
1100 ;*                *
1110 ;******************
1120 ;
1130 *= $c544 ; starting address
1140 ;
1150 jmp basic ; this is the entry point
for basic programs
1160 ;
1170 ;
1180 jmp start ; this is the entry point
for machine code programs
1190 ; machine code programs must set
the position of the box up with the
1200 ; following variables - xtop, ytop,
xbot, ybot.
1210 ; the other variables must be put
into the accumulator as follows:
1220 ; bit seven holds the screen status,
bit six the menu status,
1230 ; bits three to zero hold the colour
of the box, and x & y hold the
1240 ; location of the text for the win-
dow (x low, y high)
1250 ;
1260 ;
1270 ;** variables **
1280 ;
1290 xtop   .byt 0   ; top left x position
of box
1300 ytop   .byt 0   ; top left y position
of box
1310 xbot   .byt 0   ; bottom right x
position of box
1320 ybot   .byt 0   ; bottom right y
position of box
1330 text   .byt 0,0 ; pointer to text
area
1340 screen .byt 0   ; screen flag
1350 menu   .byt 0   ; menu flag
1360 finish .byt 0   ; general
1370 boxc   .byt 0   ; box colour
1380 lines  .byt 0   ; number of lines of
text
1390 xlin   .byt 0   ; as above
1400 cols   .byt 0   ; number of col-
umns of text
1410 chrc   .byt 0   ; current character
colour
1420 xtem   .byt 0   ; temporary storage
for xtop
1430 ytem   .byt 0   ; as above for ytop
1440 ;
1450 ;
1460 ;
1470 ;** constants **
1480 ;
1490 buffer .byt 0,$c8;location of buffer
for screen & colour memory - $c800
1500 tlcorn .asc "0" ; top left corner of
box
1510 trcorn .asc "." ; top right corner of
box
1520 blcorn .asc "-" ; bottom left corner
of box
1530 brcorn .asc "=" ; bottom right cor-
ner of box
1540 horizo .asc "`" ; horizontal charac-
ter
1550 vertic .asc "]" ; vertical character
1560 ; all of the above characters can be
changed before assembling
1570 joysti =56320  ; joystick port
two
1580 ;the first routine is not used by
basic, only by machine code callers
1590 ;it stores the accumulator in the ap-
propriate places
1600 ;
1610 start  sta boxc   ; store the accumu-
lator in boxc
1620 :      stx text   ; store the x register
in text
1630 :      sty text+1 ; store the y regis-
ter in text plus one
1640 :      ldy #0     ; load y with zero
1650 :      tya        ; transfer to a
1660 nextb  ldx #0     ; load x with zero
1670 :      clc        ; clear the carry
1680 :      rol boxc   ; rotate boxc left
1690 :      bcc coltex ; if the carry is
clear, coltex
1700 :      inx        ; increment the x
register
1710 coltex txa        ; transfer x to a
1720 :      sta screen,y;store the accumu-
lator in screen+y
1730 :      iny        ; increment y
1740 :      cpy #2     ; compare y with 2
1750 :      bne nextb  ; if we're not fin-
ished getting bits, nextb
1760 :      clc        ; clear the carry
1770 :      lsr boxc   ; put boxc back to
its original
1780 :      lsr boxc   ; position, minus
the 6th & 7th bits
1790 ;
1800 ; entry point to main routine for
basic callers
1810 ;
1820 b      lda screen ; test to see if we
have to save the screen memory
1830 :      bne save   ; if yes, save
1840 :      jmp box    ; no, next segment
of program
1850 save   lda buffer ; set up buffer
```

```
pointers
1860 :    sta 253    ; in 253 & 254
1870 :    lda buffer+1
1880 :    sta 254
1890 :    jsr copy   ; copy the screen memory to the buffer
1900 :    lda #$d8   ; set up the copy routine to copy colour memory
1910 :    jsr copy2  ; copy
1920 :    jmp box    ; next segment of program
1930 copy  lda 648   ; 648 holds the page of the screen
1940 copy2  sta 252  ; set up pointer to screen, entry point to copy colour
1950 :    ldy #0     ; set up the y register and the low byte
1960 :    sty 251
1970 copy3  clc      ; clear the carry, entry point to copy back
1980 :    adc #4     ; add 4 to the start of the page of memory
1990 :    sta finish ; establish finishing point
2000 notpag lda (251),y; get byte
2010 :    sta (253),y; store byte
2020 :    iny        ; increment y
2030 :    bne notpag ; if not end of page, notpag
2040 :    inc 254    ; increment the page pointers (high bytes)
2050 :    inc 252
2060 :    ldx 252    ; compare the high byte with the finishing point
2070 :    cpx finish
2080 :    bne notpag ; if not finished, do another page
2090 :    rts        ; return from subroutine
2095 ;
2096 ;
2100 pos   stx finish ; this routine saves the x register and positions
2110 :    ldx ytop   ; the cursor according to xtop and ytop
2120 :    ldy xtop   ; please note that the kernal's plot routine
2130 :    clc        ; mixes up x and y
2140 :    jsr $fff0  ; plot
2150 :    ldx finish ; restore the x register
2160 :    rts        ; end routine
2170 ;
2180 ;
2190 ;
2200 box   lda ytop  ; this routine draws the window!!!
2210 :    sta ytem   ; save the x and y coordinates of the top left corner
2220 :    lda xtop   ; in xtem and ytem
2230 :    sta xtem
2240 :    jsr pos    ; position the cursor
2250 :    lda boxc   ; current cursor colour now box colour
2260 :    sta 646    ; current cursor colour
2270 :    lda tlcorn ; top left corner
2280 :    jsr $ffd2  ; output to screen
2290 :    sec        ; set carry flag for subtraction
2300 :    lda xbot   ; establish number of columns
2310 :    sbc xtop
2320 :    tay        ; y holds column number
2330 :    sty cols
2340 top   lda horizo ; draw top row of box
2350 :    jsr $ffd2  ; output .a to screen
2360 :    dey        ; decrement y
2370 :    bne top    ; no, draw another horizontal
2380 :    lda trcorn ; draw top right corner
2390 :    jsr $ffd2  ; output to screen
2400 :    sec        ; set carry for subtraction
2410 :    lda ybot   ; establish number of lines
2420 :    sbc ytop
2430 :    tax        ; put in x register
2440 :    stx xlin
2450 :    sta lines
2460 :    lda text   ; set up 251 as pointer to text
2470 :    sta 251
2480 :    lda text+1
2490 :    sta 252
2500 nexlin inc ytop  ; move pointer to next line to print down one
2510 :    jsr pos    ; position cursor there
2520 :    lda vertic ; print a vertical
2530 :    jsr $ffd2  ; output to screen
2540 :    lda chrc   ; restore old character colour
2550 :    sta 646    ; current colour under cursor
2560 prin  ldy #0    ; set y to beginning of line of text
2570 :    lda (251),y ;load .a with byte
2580 :    beq endl   ; if its zero, end of line has been reached
2590 :    jsr $ffd2  ; if not, output to screen
2600 :    inc 251    ; adjust pointer to text
2610 :    ldy 251    ; and .y register
2620 :    bne prin   ; if not zero, prin
2630 :    inc 252    ; increment high byte
2640 :    clc
2650 :    bcc prin   ; go back to prin
2660 endl  ldx 211   ; end of line
2670 :    cpx xbot   ; check to see if cursor equals last x position
2680 :    beq c2     ; if they're equal, c2 to print a space
2690 :    bcs cont2  ; if cursor is more, don't print anything
2700 end2  lda #32   ; print a space
2710 :    jsr $ffd2  ; output to screen
2720 :    ldx 211    ; check cursor position again
2730 :    cpx xbot
2740 :    bne end2   ; if not equal, another space is needed
2750 c2    lda #32   ; print a space
2760 :    jsr $ffd2  ;
2770 cont2  inc 251  ; increment the pointer to the text
2780 :    ldy 251    ; to look at the byte after the zero
2790 :    bne cont
2800 :    inc 252    ; handle high byte
2810 cont  lda 646   ; store current character colour
2820 :    sta chrc   ; in chrc
2830 :    lda boxc   ; put box colour in 646
2840 :    sta 646
2850 :    lda vertic ; print vertical at end of line
2860 :    jsr $ffd2
2870 :    dec xlin   ; decrement the number of lines to be printed
```

```
2880 :    ldx xlin  ; compare it with $ff
2890 :    bpl nexlin ; if not, next line
2900 :    inc ytop  ; increment the y position of the cursor
2910 :    jsr pos   ; set cursor
2920 :    lda blcorn ; print bottom left corner
2930 :    jsr $ffd2
2940 :    ldy cols  ; get number of columns
2950 bot  lda horizo ; print horizontals until end of line
2960 :    jsr $ffd2
2970 :    dey
2980 :    bne bot
2990 :    lda brcorn ; print bottom right corner
3000 :    jsr $ffd2
3010 :    jmp menum  ; goto menu section
3060 ;
3070 xyt  lda xtem  ; restore position of top left corner of box
3080 :    sta xtop
3090 :    lda ytem
3100 :    sta ytop
3110 :    rts
3120 ;
3130 ; menu routine
3140 ;
3150 menum  lda menu  ; check menu status
3160 :    bne yes   ; if a menu has been selected, yes
3170 joy  lda joysti ; get joystick header
3180 :    and #16   ; test for button
3190 :    cmp #0    ; if not, joy
3200 :    bne joy
3210 :    jmp copysb ; copy screen & colour back if required
3220 yes  inc xtem  ; point to first byte of text on screen
3230 :    inc ytem
3240 :    jsr xyt   ; set xtop & xbot
3250 :    dec ytem  ; decrement ytem to point to top border
3260 :    inc ybot  ; set ytop to flash's requirements
3270 :    inc ybot
3280 fl3  jsr flash ; flash line - reverse it
3290 :    jsr cont6 ; delay
3300 wait  lda joysti ; test joystick for up
3310 :    and #$01
3320 :    cmp #0
3330 :    bne cont4
3340 :    jmp up    ; if so, move flash up
3350 cont4  lda joysti ; test for down
3360 :    and #02
3370 :    cmp #0
3380 :    bne cont5
3390 :    jmp down  ; if yes, move
```

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```
flash down
3400 cont5  lda joysti ; test for button
3410 :      and #16
3420 :      cmp #0
3430 :      beq copysb ; if yes, next segment
3440 :      jsr cont6  ; delay
3450 :      jmp wait   ; check joystick again
3455 ;
3460 cont6  ldy #100   ; this routine creates the necessary delay
3470 cont8  ldx #255   ; to make sure the flash doesn't move too quickly
3480 cont7  dex
3490 :      bne cont7
3500 :      dey        ; go around 100 x 255
3510 :      bne cont8
3520 :      rts        ; return
3525 ;
3530 up     jsr flash  ; flash off
3540 :      dec ytop   ; decrement pointer, move it up one
3550 :      ldx ytop   ; make sure it doesn't go over the top
3560 :      cpx ytem
3570 :      bne fl3
3580 :      inc ytop
3590 :      jmp fl3    ; flash
3600 down   jsr flash  ; flash off
3610 :      inc ytop   ; increment pointer to move flash down
3620 :      ldx ytop   ; make sure it doesn't drop off the end
3630 :      cpx ybot
3640 :      bne fl3
3650 :      dec ytop
3660 :      jmp fl3    ; flash
3670 ;
3680 ; copy screen & colour memory back if necessary
3690 ;
3700 copysb lda screen ; test screen status
3710 :      beq g      ; if zero, don't copy anything
3720 title  ldy #0     ; set up 251 for copying back
3730 :      lda buffer
3740 :      sta 251
3750 :      lda buffer+1
3760 :      sta 252
3770 :      lda 648    ; set up 253 for receiving data
3780 :      sta 254
3790 :      lda #0
3800 :      sta 253
3810 :      lda buffer+1
3820 :      jsr copy3  ; copy
3830 :      lda #$d8   ; set up for colour
3840 :      sta 254
3850 :      lda #0
3860 :      sta 253
3870 :      lda 252
3880 :      jsr copy3  ; copy
3890 ;
3900 ;
3910 ;
3920 g      sec        ; the end!!!
3930 :      lda ytop   ; determine how far down selection was made
3940 :      sbc ytem   ; by subtraction
3950 :      ldy menu   ; check to see if its needed
3960 :      bne end    ; if so, end
3970 :      lda #0     ; if not, return zero
3980 end    rts        ; end
3985 ;
3986 ;
3987 ;
3990 flash  jsr pos    ; position cursor
4000 :      ldy 211    ; 211 holds the number of columns across the cursor is
4010 :      ldx cols   ; get number of columns
4020 flas   lda (209),y; flash byte
4030 :      eor #$80   ; eor with 128, reversing it
4040 :      sta (209),y
4050 :      iny        ; increment pointer to characters
4060 :      dex        ; decrement number of columns
4070 :      bne flas   ; if not finished, flash some more
4080 :      rts        ; return
4090 ;
4100 ;
4110 ; get parameters from sys
4120 ;
4130 ;
4140 basic  jsr $79    ; basic entry point, jsr to chrgot
4150 :      jsr $e200  ; get comma, evaluate expression - number (0-255)
4160 :      cpx #37    ; larger than 37, illegal quantity
4170 :      bcs syntax ; its called syntax because syntax is six letters long
4180 :      stx xtop   ; xtop
4190 :      jsr $e200  ; eval exp
4200 :      cpx #24
4210 :      bcs syntax
4220 :      stx ytop
4230 :      jsr $e200
4240 :      cpx #37
4250 :      bcs syntax
4260 :      stx xbot
4270 :      jsr $e200
4280 :      cpx #24
4290 :      bcs syntax
4300 :      stx ybot
4310 :      jsr $e200
4320 :      cpx #16
4330 :      bcs syntax
4340 :      stx boxc
4350 :      jsr $e200
4360 :      cpx #2
4370 :      bcs syntax
4380 :      stx menu
4390 :      jsr $e200
4400 :      cpx #2
4410 :      bcs syntax
4420 :      stx screen
4430 :      jsr $aefd  ; comma
4440 :      jsr $ad9e  ; evaluate expression - number or string
4450 :      lda $0d    ; test for number
4460 :      bne notnum ; if string, notnum
4470 :      jsr $bddd  ; convert fac1 to ascii string at $100
4480 :      jsr $b487  ; scan $, set up descriptor, create in active $ space
4490 notnum jsr $b6a6  ; get number of characters in string, return in .a
4510 :      stx text   ; text now holds pointer to string
4530 :      sty text+1
4540 :      jmp b      ; jump to part b of program, skipping machine code setup
4550 syntax jmp $b248  ; illegal quantity error
```

■

Adventurer's realm

by Michael Spiteri

Hello folks! Welcome once again to the dark and damp caves of the Realm. This month we delve into numerous adventure games to give you some interesting short reviews.

If you would like to write to the Realm for any reason you can think off (as long as it has something to do with Adventure games), then don't hesitate in sending your scriptures to..

Adventurer's Realm
1/10 Rhoden Court
North Dandenong
Victoria 3175

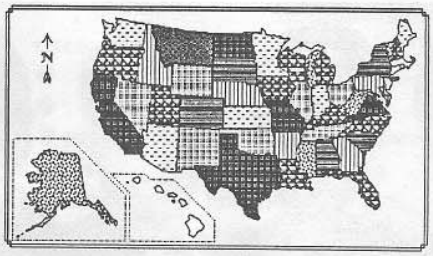
Remember to enclose a stamp or self addressed envelope. Free hint sheets for the following games are available from the Realm:*Zork 1,2,3 Hobbit*, *Hitchhikers*, *Lord of Rings*, *Hampstead Castle of Terror* and *Never Ending Story*.

Realm contest

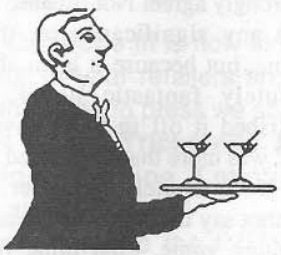
Unfortunately, because of lack of entries, the Realm contest has been cancelled. Everyone seemed excited about a contest in the Realm, and when it finally happened, nobody entered! Many apologies to those few who did enter the contest, hopefully the next one will be more successful.

More super adventure news from the States . . .

Infocom are not the only people producing new adventure products. Sierra will soon release the the controversial sequel to *Leisure Suit Larry*, as well as the not-so-controversial but just as exciting *Kings Quest 4*. On the subject of controversy, Electronic Arts have released a third game in their *Bard's Tale* series.



Labeled *Bard's Tale III: The Thief of Fate*, it claims to have a much stronger storyline than its predecessors. Back to Sierra again, who have also just released an original adventure called Gold Rush, a game based in the heart of California. Finally, the most recent Cinerama product is called *The Three Stooges*. Watch this space for more info.



Absolutely fantastic news regarding Infocom and Questor

Everyone can now take a sigh of relief. Questor are now back in the business of distributing Infocom games in Australia. Tim Allison of Questor assured me that all the latest releases will soon be available.

Even Greater News Regarding Infocom

Sherlock Holmes & the Riddle of the Crown Jewels is the latest release from Infocom, soon to be available on Australian shores. You take part in a intriguing detective case that promises to be more thrilling than the mystery series. Also, Infocom have invented a new program concept called INFOCOMICS. These are exactly what the name suggests) comics! Before your eyes in vivid colour graphics the player can follow a story through different characters. The first three Infocomics to be released are *Lane Mastedon vs The Blubbermen* (*Leather Goddesses* type atmosphere), *Zorkquest: Assault on Egreth Castle* (more Zorking!) and *Gamma Force: Pit of a Thousand Screams*. Each story runs for around 3-5 hours. They are selling in America for $12US, which means they shouldn't cost much in Oz.

Realm's debate centre

Okay folks, the following are comments that sort of disappeared from the May issue, however they are quite relevant to the current debate concerning the existence of mazes.

Mr M. Morris writes. "I would like to say that mazes are a complete waste of time. All they do is make a game take six months instead of three. I was stuck in the *Dracula* mazes for most of the time I was playing the game! Surely by now programmers can think of something a bit different, like the babel fish problem in *HHGTTG*. I wish more adventure games relied on pure logic rather than this type of time wasting."

MS: *Phew! Strong words from a frustrated maze eater! Obviously I am not alone in thinking adventure gamers should not be made to feel like Pacmen. However, what do the programmers feel?* Darryl Bartlett, author of *Paradox Effect I & II* has this to say.

"Concerning the debate over mazes in adventure games - from a programmer's point of view, I like to include a maze in my games. Not because they are easy to do and make the game larger, but because I regard them as another problem to solve like any other. I disagree with useless mazes, of course. Also, I personally like mapping mazes - especially the more complex ones."

MS: *Two strong valid arguments from both sides. It seems mazes will never disappear from adventure games, because as Darren stated, they are another problem to solve like any other. As long as the maze is interesting but not too frustrating, their existence can be (or must be) tolerated.*

Adventure Reviews

Not a Penny More, Not a Penny Less

Not a Penny More, Not a Penny Less is an adventure game based on Jeffrey Archer's popular novel. The package comes with a copy of the novel, which the instructions strongly recommend you read before commencing the game. I strongly agree! Not because it has any significance on the game, but because it is an absolutely fantastic novel. I polished it off in three days, and was more than impressed.

Unfortunately, however, I cannot say the same for the adventure game. First thing first, let me tell you about the plot. Harvey Metcalfe, a famous notorious crook, formed a shadow company to attract investors. As a result, four unwary chaps invested a substantial amount each.

Then the company mysteriously folds and disappears, leaving the four unfortunate blokes penniless.

The goal of the adventure is simple - you (one of the investors) team up with the other three and must work out a way to swindle Metcalfe, and take back the $1,000,000 stolen from them . . . not a penny more, not a penny less.

I didn't get very far in this game. The parser was very user hostile on the Commodore 64 version. The vocabulary was even worse. Maybe it was just me, but I became overly frustrated within 20 minutes of playing the game. Apparently, I am told, the Amiga/Atari St versions are much better.

The graphics on the 64 version were also not up to scratch. It's a real pity, as Domark haven't really done justice to the novel by releasing this game. There is speech in the game, but you will probably turn it off as soon as you try to hear it. Documentation supplied is adequate, even if there are a few errors present.

This is just my opinion of the game. It is aimed at a high intellect leveled adventurer, which maybe isn't me. The plot is highly original, however the game isn't very playable. My advice is to try the game out before you spend your hard earned money on it. Who knows - you might like it.

Not a Penny More, Not a Penny Less - by Domark Software

Reviewed on a Commodore 64

Rating out of 100.. Sixty.

Distributed by ECP (075) 96 3488

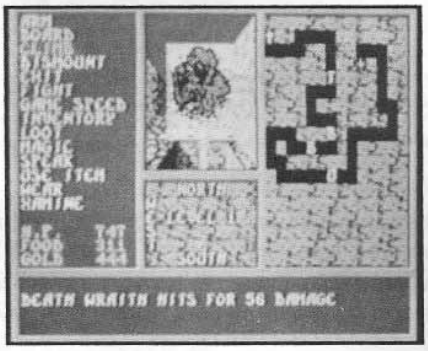
C64- D $39.95 and C $39.95.

Questron II

Fans of *Questron I* might be interested in the recent release from Strategic Simulations Inc called *Questron II*. *Questron II* is a fantasy adventure roleplaying game. This is more of a sequel to *Questron I*. The player has to find the six Mad Sorcerers and prevent them from creating the Evil Book of Magic. Completing the game involves exploring the lands and the dungeons that lay beneath them. You'll come face to face with good and evil creatures.

The package comes with a command card, a detailed instruction manual and the diskette.

As I am no great expert on RolePlaying games, I can only comment on what I saw when I played the game. One word describes the graphics - outstanding! They absolutely burst with colour and clarity. The dungeons are displayed in vivid 3d graphics and are really a pleasure to watch.



Gameplay is very simple, using a joystick to select your commands, exploring the mystical land is a breeze. The creatures are also displayed in graphic detail, and this gives atmosphere a big plus.

Questron II is a very impressive offering from SSI, and I am sure anyone who plays this game will be impressed with what they see. I sure was.

Questron II - Strategic Simulations Inc.

Distribted by OziSoft (02) 211 1266.

Available on Commodore 64 and (later) Amiga. RRP $69.95.

Commodore 64 version reviewed.

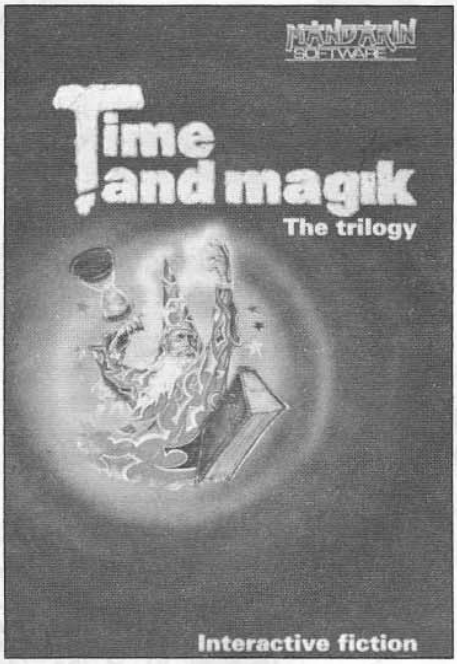
Rating out of 100..ninety-nine.

Time and Magik : The Trilogy

This is a collection of three adventure games for the Commodore Amiga. The three games included are the famous Level 9 adventures *Lords of Time*, *Red Moon* and *Price of Magik*. On their own, each game is a remarkable product, as each feature hundreds of locations, many, many write-in-to-Realm type problems and very detailed text descriptions (close to that of Infocom), and now we are gifted with Amiga graphics which burst with colour and detail, and very much enhance the games. So when you include the three of them for the price of one, it is a bit like an adventurer's dream come true.

Here is a brief description of each game.

Lords of Time: Many adventure games in one. You travel in a time machine (a clock) to many different zones to collect nine artifacts and combine them to prevent the evil Timelords doing nasty business. This game has already become a classic.



Red Moon: Become a magician and create magical spells so that you can rescue a weird and wonderful power crystal which has been stolen from the Moon Tower. The game is set on the island of Baskalos - a large and problemful place.

Price of Magik: You have to defeat the evil magician Mylgar and take his place as guardian before the Earth becomes black as night. The parser understands sentences fairly well, and I was surprised at the fairly large size of the vocabulary. You can actually recall and edit previously entered commands at a touch of a key. (Amiga version).

The documentation is excellent. About eight pages are dedicated to getting you started, loading etc, and the next 24 pages feature descriptions of each adventure in a story format which are a pleasure to read. You'd be silly to avoid this package. It represents good value for money for three absolutely superb adventure games.

Also available on the Commodore 64/128.

Time & Magik: The Trilogy, By Mandarin & Level 9, Amiga version reviewed. Rating out of 100...ninety-nine. Distributed By Pactronics. RRP C64 $39.95. Amiga $59.95.

Troubled adventurer's department

This is the Realm's insanity section - where people are looking for a cure. Only good doctors out in adventureland can help out, so please send in your help if you can.

First patient is Eden Walters of Bondi Nth, who wants to know how to reach the wizard in the Amiga public domain program *Hack*.

Then we have Walter Brank who is having incredible parmucles in *The Pawn* - "I am in front of a snowman who looks sad. Whatever I do there is no response. Also, how do I get light or money?"

Mr J Waller of Ferny Grove in Queensland is stuck in all of the three adventure games that come with the CBM Pro-pack.

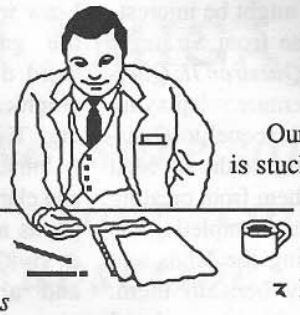
Temple Curse: What objects are needed to enter the magic pothole in the sand dungeon, and is that the only exit? He is also stuck at the pool. Can you use the boat to exit from there?

Lost Planet: How do you get through the maze of tunnels?

Island of Spies: How do you get out of or land the crashing plane at the start of the game?

David McKinney is stuck in *Dracula Pt3*. How do you get out of the forest? What do you throw to the troll in *Classic Adventure*?

Another inmate stuck in *Dracula Pt3* is Mr M. Morris of Lavington, NSW. How does he get out of the cellar? He has opened the tomb but does not know how to get in! He is also stuck in *The Pawn*. Where is the poison to kill *Kronos* and how does he get past Jerry Lee Lewis?



Then we come to the *Bard's Tale* ward, where three patients have gone completely batty trying to solve certain problems.

First meet Shane Watkins, a serious victim of *Bard's Tale II*. His mind is cracking because he does not know how to use the segments of the destiny wand. He also cannot get to level 4 from *Dargoth's Tower*.

Next is Andrew Hansen who is having mindboggling difficulties in the first *Bards Tale*. A certain rhyme is draining his sanity.

Past warscapes fought by men long dead,
And treasures lost on blooded fields,
The One God lifts His thorn-crowned head,
And lays a strength on friendly ..

Our third Bard Taler (who is stuck in the first game) is our lost cause, because he is stuck everywhere. Anyhow, here are the problems.

a) Can you tell me where the entrances to Kylerans and Mangars Towers are?

b) What is the last word of the above riddle? c)What is the answer to this riddle.

One man alive,
Now living death,
It drinketh Blood,
N' Staple breath.

A. Maxted of Neutral Bay is stuck in two games.

Guild of Thieves:

1) What is the plastic bag for? What is the correct mixture for the cauldron? What is the possible total score?

Arazok's Tomb:

1) How do I turn the power on in the city?

2) How do I open the two doors that are held by the forcefields? How do I protect myself from the dragon? I'm afraid that's all I can fit in this month, however next month I'll have many solutions for recently troubled adventures. So stay tuned! ■

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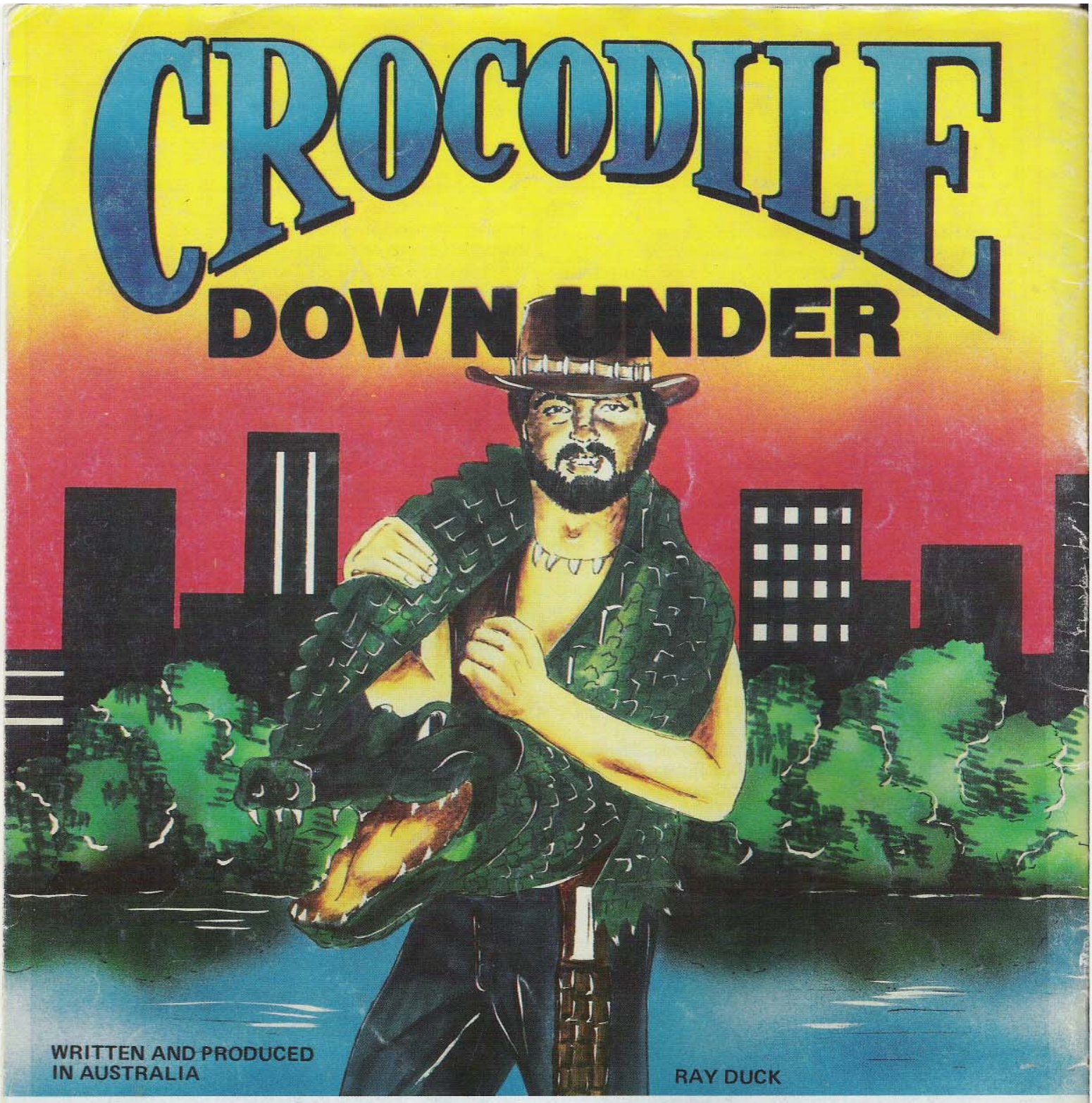

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